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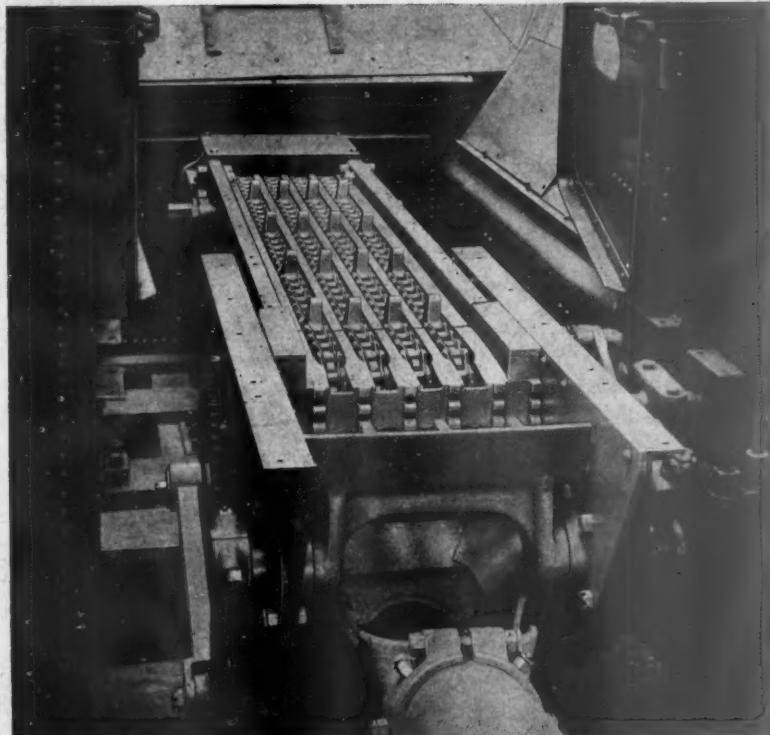
Railway Age

SECOND HALF OF 1922—No. 5

NEW YORK—JULY 29, 1922—CHICAGO

SIXTY-SEVENTH YEAR

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Note the absence of
slide plates on the chain
feeder, and the position
of the coal crusher
ahead of the coal gate.

Elvin Safeguards

Elvin Mechanical Stoker Construction

protects the stoker mechanism

—Foreign obstructions simply stall the machine and can be easily removed by the fireman.

protects operating efficiency

The stoker mechanism takes up little cab room, does not interfere with hand firing, when necessary, and does away with dust and dirt in the cab.

protects the trainmen

The feeder is a slow-moving chain without slide plates. It is entirely safe to walk in the tank at any time.

protects combustion efficiency

Passing small lumps of coal without further crushing, and firing small, evenly distributed charges, are some of the ways by which maximum combustion efficiency is secured.

Elvin Safeguards are but one phase of Elvin Stoker Supremacy. Write for test data and road records that prove others.

THE ELVIN MECHANICAL STOKER COMPANY
50 Church Street

New York

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The chemical elements and physical properties of welding rods and electrodes constitute one very important factor in determining the value of the finished weld.

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Armco metallurgical experts test Armco Ingots for the presence of nine elements, which indicates the great care and exactness behind Page-Armco welding products.

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PAGE-ARMCO WELDING RODS and ELECTRODES

EDITORIAL



The Table of Contents Will Be Found on Page 5 of the Advertising Section

The Northern Pacific has found a new way to advertise the scenic attractions along its route and hereafter the slogan of its publicity department will be "Say It with Pictures."

A New Way to Advertise

Beginning last week, actual photographs, each showing some point of beauty on that road, were substituted for the ordinary printed menus on its dining cars. Patrons will be permitted to retain these photographs as souvenirs, and to increase their value as such, no advertising has been added to mar the face of the picture, the meal items being printed on the reverse side. This seems to be a step forward in the art of railway advertising, for no words can describe the garden spots of this country as well as a clear photograph. It is reasonable to expect, as the Northern Pacific does, that this advertising will prove to be an excellent means of developing travel, for the photographs will find a wide distribution in homes and offices throughout the country.

While foremen and the rank and file of railway forces are in many instances excluded from participation in any work of the departments now affected by the

A Duty and an Opportunity

strike, it is commonly expected that the subordinate officers shall willingly assume any duties that the requirements of the hour demand of them. This is as it should be. These men and their superiors, taken collectively, constitute the management of the railroad, and as a part of it each man should do his share to insure the continuity of transportation service. While such duties have their disagreeable aspects and may take men away from their regular work to its obvious detriment, the emergency employment which the present condition imposes on them affords an opportunity for acquiring a knowledge beyond the scope of their regular employment which is bound to accrue to their benefit. As the railroad man is advanced in his department to positions of increasing responsibility, he soon finds that his progress is governed in considerable measure by the extent of his knowledge concerning railway matters outside his own regular work. Therefore, any opportunities afforded him for obtaining a broader grasp of railway transportation should be seized with enthusiasm.

A choice from a number of designs of rail motor cars is now offered to railroad officers. A study of these cars brings out

Hauling Unnecessary Dead Weight

one point with the greatest clearness; namely, that those responsible for their design strongly realize the importance of holding the dead weight to the lowest possible amount consistent with strength. One of the latest designs of such equipment consists of a motor car with a baggage compartment which weighs 782 lb. per passenger seat, together with a trailer which weighs 275 lb. per passenger seat. The two cars combined have a seating capacity for 56 passengers in addition to baggage and weigh only 478 lb. per passenger. Other designs of motor cars weigh from 600 lb. to 700 lb. per passenger seat. The operating economies claimed for gasoline driven rail motor cars depend to a considerable extent

on keeping the dead weight down to a minimum. The contrast between the weight of such cars and the usual passenger coach is striking. Modern steel day coaches rarely weigh less than 1,500 lb. and frequently 2,000 lb. per passenger while sleeping cars run as high as 7,000 lb. per berth. There would appear to be possibilities of some real reductions in railway operating costs by a somewhat greater attention to passenger car design and an elimination of all unnecessary dead weight.

Various methods have been adopted by the railroads from time to time in the effort to get suggestions from employees

The Unions' Interest in Efficiency

as to improving efficiency and safety of operation. Many attempts also have been made to educate employees for advancement, but this only to a limited extent in the operating department. None of these trials has been successful in great enough degree to attract general attention. One method by which the desired results might be obtained seems to have been given but scant chance to prove its merits. That is an out-and-out bid to the unions for their co-operation. Cars, locomotives, yards, signal plants—these are the tools with which operating department employees work. That the men have some degree of interest in these tools and the regulations under which they are used is self evident. Notwithstanding this, it has been difficult to get them to express their opinions when appealed to as individuals. Why not call in the local officers of the unions affected and ask them to find the sentiment of their men regarding proposed changes in facilities or methods? Is it not reasonable to suppose that a greater degree of co-operation might be secured than under present methods of appealing directly to the employees as individuals? Almost every magazine published by the operating department unions contains a certain amount of technical material, indicative of some interest in these matters and this in spite of the fact that the railroads have done little if anything to encourage the interest of the unions as such in technical problems. Great economies could doubtless be effected if the interest of operating department employees could be aroused. A general movement of this nature might go far toward bringing about the increased efficiency of labor which alone makes general wage increases possible. More than that, the interest of the worker in securing the greatest efficiency of production is the only solution of the labor problem.

In view of the increasing use of electricity for power and lighting by the railways and the rapid extension of local

The Economy of Purchasing Electric Power

utilities companies, it is worth while to investigate whether this power cannot be purchased more economically than it can be generated with railway owned and operated equipment. While the decision in each case must be based on the local conditions existing at that point, it is capable of demonstration that roads can buy electric power for driving shop machinery or lighting large office buildings cheaper than they are now producing the same energy at many points. The

electrical engineer of a southern road said recently that while "the demand for electrical power in our shop has far exceeded the capacity of our boilers and generators, as long as we can buy power from the public utilities company at the present rate we cannot justify an expenditure for further additions to our generating plant, for investments in other improvements will pay a much higher return." This condition is not due to any lack of skill on the part of the railway engineering forces but rather to the fact that the public utilities companies operate large and efficient generating units and their load factor is more nearly constant during the 24 hours of the day. Where they have large evening lighting demands, they can offer attractive power rates during the day in order to keep the machines on a constant load. While it is true that up to a certain capacity exhaust steam can be used economically for heating buildings, this capacity is exceeded in many cases. Furthermore the heating of buildings is necessary during less than half of the year, although in some cases it is possible that money can be saved by buying power only during certain months of the year. Of course, there are many well engineered and efficiently operated power plants in the large railroad shops of this country but there are as many or more that are losing money, if all operating and overhead charges are considered. After extensive engineering studies the 5,000 kilo-watt connected load to be used in and about the new union station in Chicago is to be furnished under contract by a public utility company at such a low rate that a power plant for even this large load was not considered a profitable investment. If such a condition prevails here it would seem advisable for railroads to make a similar study of many of their smaller projects.

The principle of regulating wages through the agency of a national authority, which was first exercised by the Railway

Graduated Wage Rates for Foremen Wage Commission of the United States Railroad Administration and subsequently perpetuated by the Railroad Labor Board, has had a general leveling effect on the wages of all classes of

railway employees. Whatever the effect of this so-called standardization may have been on laborers or craftsmen, it is undeniably unfortunate as applied to foremen. Whereas the railroads formerly maintained differentials in the rates for these men to compensate for variations in degree of responsibility, capacity or service record, the tendency now is to pay all men the established minimum rate without regard to the effect of these influences. The section foremen may properly be taken as an illustration. It is not feasible or desirable to subdivide sections so that each man is accorded exactly the same degree of responsibility. Some of these men have more ability than others and any tendency to reduce these men to a common level by an arrangement that would insure each of them the same degree of responsibility would represent a shameful waste of ability. However, any attempts to recognize difference in capacity without acknowledgment in the form of graded compensation cannot be entirely successful. Men are selected for foremen because they have demonstrated the "will to do" and this characteristic cannot be fostered to the fullest extent unless the men are afforded encouragement through the promise of reward. That the wages of foremen in railway service are now well within reason is evidenced by the findings of the Labor Board in the recent wage reduction for maintenance of way and mechanical department employees. By recognizing these rates as true minimum rates and applying proportionate increases to them for the foremen deserving of special recognition, it should be possible for the railroads to effect a marked improvement in the morale of their subordinate supervisory forces.

In the last few years a very considerable number of water treating plants have been installed on various railroads.

When Treating Plants Pay Dividends These installations were undoubtedly made only after the management was convinced that certain good would come from an investment ranging from a few hundred dollars, perhaps, to a figure in excess of \$20,000. Once installed and set in operation, however, it has happened in many cases that little interest has been shown in these installations, other than perhaps to ascertain occasionally if they are operating or to inquire into the seemingly large expense for their maintenance or longer justification for their use. At a time like this when the paramount concern is the getting of trains over the road with a crippled organization, the treating plant is apt to receive little attention either from the roads operating them or such roads as have had the matter of their installation under consideration. As a matter of fact, however, on roads where bad water is encountered, in even small amounts, this is the very time when the treating plant should receive special attention, for by removing scale-forming matter and improving water in other respects, the properly designed and properly operated treating plant at once emerges from a position of relative obscurity to one of much significance as an important factor in getting trains over the road when, regardless of the cost, it is next to impossible to give more than a minimum amount of attention to keeping the rolling stock in repair and operation. On some roads a survey will undoubtedly disclose the fact that a system of treating plants is enabling locomotives to operate without boiler trouble for several days more than they possibly could under raw water conditions and may even disclose the fact that by reason of treating the water, the power can be operated over much longer divisions than it now is. To the same degree that railroads having good water, therefore, can congratulate themselves on their good fortune, railroads having bad water can look with satisfaction upon their earlier foresight in having established treating plants. This is a time when treating plants pay big dividends, by reason of which railroads having them should by all means give close attention to their proper operation.

The Train Control Question

ADVOCATES OF train control may be classified under three heads: (1), those favoring a simple automatic stop; (2), those who advocate speed control as the only logical solution of this problem, and (3), those who feel that there is a field for both types, depending upon the service conditions to be met. Regarding the automatic stop, we have on the one hand the railroads, who requested, through A. M. Burt at the hearing before the Commission in March, that prohibitive restrictions should not be placed on the use of the automatic stop by roads wishing to avail themselves of such a device and on the other hand the Commission's decision that the granting of this request would not provide the necessary safeguards. Advocates of speed control contend that the only logical way that train control should be installed is with the speed control feature and good arguments are advanced in support of this contention. Others (and we are among them) feel that there is a field for both types and that the railroads should be allowed some latitude in their selection of devices in line with the Commission's statement that "the degree of control desired by a railroad will depend upon the particular operating and traffic conditions upon its road."

Speed control has proved its case insofar as the control of trains is concerned in dense traffic territory on electrically operated lines with equipment having practically the same

constant in its braking power. We contend, however, that undue weight has been given to the application of speed control to steam line service in open territory with much lighter traffic in the majority of cases, and with varying percentages of braking power depending on the type of train because we believe that the effects of speed control on freight trains have not been demonstrated on a large enough scale and over an extensive enough territory to determine definitely its effects in this service. We agree that speed control applied to passenger equipment should operate satisfactorily, but freight service must also be considered.

The control of long freight trains, particularly on long descending grades, is a matter which requires the exercise of sound judgment. In the exercise of this judgment many times there is little latitude between what constitutes success and what constitutes failure, which generally means disaster. Under the cycling system of brake operation with alternate high and low speeds on long descending grades it is as yet an open question whether the operation of an automatic speed control is not likely to create a hazard greater than that which it is intended to remove? Can it be applied to drag freight trains under all conditions without increasing the chances of wrecks and damage due to break-in-twos? If it is impracticable in one class of freight service can it be made applicable in any other without completely equipping all locomotives? Are any of these questions as yet answerable on the basis of experience under service conditions?

Train control, we believe, if properly applied, will materially assist in train operation as well as promote safety. However, as only one type of automatic train stop or train control has proved itself, viz., the intermittent contact type, train control as respects the induction, the continuous and the wireless types is still in the experimental stage. Consequently we have contended that the order of the Commission was drastic and that much greater good would have been accomplished if arrangements had been made for eight or ten roads to make installations of various types on a sufficiently extensive scale to furnish comparative data as to the operating results of speed control in comparison with the intermittent contact type. The roads then would be in a better position to determine which types of control meet their operating conditions most satisfactorily.

Union Leaders' Concessions Show Strike Was Without Cause

B. M. JEWELL and other leaders of the shop crafts unions now admit that they had no good reason for ordering the shop employees' strike. They do not do this in specific language but by stating the terms on which they are now willing to call the strike off.

They indicate that they are willing to accept the wages and working conditions fixed by the Railroad Labor Board, provided they shall be given hearings regarding these matters. But they knew when they ordered the strike that the Labor Board was functioning daily and that they could always get hearings by it regarding any controversy with the railways. All they had to do to get further hearings was to go to work under the wages and rules awarded by the Board, get conferences with the railways regarding proposed new wages and working conditions and thus start a controversy within the meaning of the law. The Board would then have had to give them hearings even if there never had been any strike.

Another condition they make for calling off the strike is that the railways shall agree to abolish the system of contracting out work. But all the railways except two promised to do this before the strike order went into effect.

Another condition they make is that the railways shall agree to the establishment of a national board of adjustment.

They knew when they ordered the strike and know now that most of the railways will never agree to this, although many of them are willing to establish regional boards of adjustment. The question of a national board of adjustment really was dragged in after the strike order was issued and had no actual part in causing it to be issued.

The labor leaders also demand as a condition of calling off the strike that all strikers shall be taken back to work with their full seniority rights. This the railways refuse to do. Recent developments have made clear the seniority issue for some days has presented the only real and substantial obstacle to the termination of the strike. This fact conclusively demonstrates that there never was any good reason for ordering the strike. Of course the issue of seniority rights arose only because the strike occurred, and after it occurred. Since the labor unions are willing to yield on every issue that existed before the strike began, it necessarily follows that no issue existed before the strike began that was sufficient to justify its being begun.

A large part of the public apparently does not fully understand why the railways are standing so firm on this question of seniority in spite of the fact that their stand obviously is protracting the strike. There are three main reasons:

First, the men who stayed at work and those who have since gone to work have been promised steady employment by the railways. On many railways if the strikers should be taken back with their full seniority rights it would be impossible to retain in the service even at present a large number of the men who are now at work. Furthermore, in periods of business depression when it is necessary to reduce forces, the men with the highest seniority rights are able to stay at work while those who come last on the seniority list are laid off. Therefore, to take the strikers back with their full seniority rights would be to condemn a large part of the men who are now at work to relative irregularity of employment, or to complete loss of their jobs. This would be unjust to these men and would involve violation by the railways of the promises they have made to them. It would also involve disregard of promises to protect them which were made by President Harding in his proclamation, and by the Board in the resolutions that were adopted when the strike began.

Second, it is not improbable that there will be future strikes on the railways either in the absence or in disregard of decisions rendered by the Labor Board, and if the men who have worked during this strike are not protected fewer men will be willing to work during future strikes, thereby increasing the difficulty of preventing interruptions of transportation.

Third, the labor leaders have indicated that they will "discipline" their members who have stayed at or returned to work during the strike. This doubtless means that they will throw them out of the unions and make their work as disagreeable as possible in future wherever they work among members of the unions. If these men are not to be protected by the railways in the settlement of the question of seniority and at the same time are to be "disciplined" by their unions, their punishment for having stayed loyally at work when not only the railways but the government of the United States, through the President and the Railroad Labor Board, asked them to do so will be severe indeed.

It is very unfortunate that the strike is being protracted because of inability to settle an issue which was not involved in the controversy which caused the strike, but it is a natural and indeed inevitable result of the calling of the strike without any justification. In the circumstances it is plain if the railways should lose, why this would make strikes more probable and numerous in the future. If, on the other hand, they win, and they are gaining ground every day, the outcome will greatly increase the probability of peaceful settlements in future. Certainly this is what the public and the railways desire, and what railway employees, in their own interests, ought to desire.

Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

Speed Control vs. Automatic Stop

CHICAGO.

To THE EDITOR:

I have read with considerable care the editorial appearing on page 51 of the *Railway Age* of July 8, entitled "Permissive Features Omitted from Automatic Stop Specifications." This editorial is not at all in line with the facts, as I understand them, either as to the omission of the permissive feature or as to speed control. Certainly the statement of the editor that the use of speed control in connection with train control "may be compared to a contractor trying to erect a building by attempting to construct the top floors first," is incorrect to say the least; because obviously such construction is impossible while the use of speed control is not only practicable but it is, in fact, comparable to the foundation of a building upon which the entire structure is erected.

It is a well known fact that before a train can stop it must be slowed down. Where, then, in the movement of a train should the reduction of speed be made if not when approaching a stop signal? How can we insure that a train will approach a stop signal prepared to stop, other than by the use of speed control? How can safety be assured for a train passing a stop signal and running into an occupied block other than by prescribed low speed control? How can safety with dispatch be obtained by means other than speed control?

The successful solution of the problem of automatic train control in connection with railway operation must take into account trains of varying tonnage and varying speeds, areas of thin and areas of thick traffic density, gradients and curves, railroad crossings and junctions at grade, etc. A train moving slowly, particularly a heavy tonnage train moving slowly, should not be affected or restricted as to speed when passing a caution signal nor should such a train be restricted as to speed, so long as it approaches the stop signal prepared to stop.

The same rule holds true for a train of light tonnage moving slowly. Certainly all trains moving at high speed should be reduced as to speed, so that they will stop within safe limits.

It must be apparent that without automatic speed control either one of two objectionable conditions will be present: (a) An automatic stop located a sufficient distance from the stop signal to insure that the highest speed train, under steam, will be brought to a stop before passing the stop signal. (b) An overlap of sufficient length to insure that the highest speed train will stop within the overlap limits. (c) A combination embracing (a) and (b). The objection to such an arrangement is obvious. With reference to (a): Slow moving heavy tonnage trains would receive an automatic stop more than a mile from the stop signal, thus not only causing unnecessary stops but when the vision of the engineman is obscured as by rain, snow and fog, such a stop would leave him entirely uninformed as to conditions ahead and of necessity, in addition to the loss of time due to such an unnecessary stop, considerable additional time would be lost in approaching the stop signal. Precisely the same conditions are true of any train even when moving slowly and under

complete control of the engineman. (b) An overlap is not practicable at all locations as at an interlocking plant at a crossing or junction where derails are adjacent to signals so that it is impossible to establish uniform operation with satisfactory results when (a) and (b) are considered.

Automatic speed control is necessary to successful operation and to make the train control system consistent with signal indications; it is necessary to provide sufficient flexibility to meet the varying demands of traffic. Why put a two-way train control system on a three-position signal system or a signal system carrying the three standard signal indications as proceed, proceed with caution, and stop? Speed control is necessary to insure that the train will conform with the indication of the caution signal and to avoid unnecessary delays when a train is running at a safe speed.

By a proper application of automatic train control, including speed control, trains may be kept moving safely and maximum capacity of the track will be secured. Automatic speed control may be applied to provide protection wherever conditions necessitate reduced speed.

Automatic speed control may be so provided that when the engineman is on the alert, the necessity of stopping a train at a permissive stop signal will be eliminated since the speed of the train may be restricted automatically to that predetermined for an occupied block.

It is evident that any train control system, to insure safety and observance of signals, should control the train when danger is immediately impending, hence speed control is necessary when approaching danger. Why permit unlimited speed to be restored when conditions necessitate reduced speed preliminary to a stop? Why provide for a repetition of such an accident as occurred at Porter, Ind.?

Automatic speed control is necessary to insure safe speed when approaching railway crossings or junctions at grade as an extended overlap cannot be provided at such locations. Obviously it is not good practice to stop a train automatically a considerable distance from a crossing or junction and then remove all speed restrictions in the face of danger.

Now as to paragraph (c) of the requisites of the Interstate Commerce Commission, referred to in your editorial, I believe that the editor is grossly incorrect in his interpretation of this paragraph. The order of the commission as published provides for the following: (a) Automatic stop, after which a train may proceed under low speed restriction until the apparatus is automatically restored to normal or clear condition by reason of the removal of the condition which caused the stop operation. (b) Low speed restriction; automatic brake application under control of the engineman who may, if alert, forestall application at a stop indication point or when entering a danger zone and proceed under the prescribed speed limit, until the apparatus is automatically restored to normal or clear condition by reason of the removal of the conditions which caused the low speed restriction. (c) Medium speed restriction, requiring the speed of a train to be below a prescribed rate when passing a caution signal or when approaching a stop signal or a danger zone, in order to forestall an automatic brake application. (d) Maximum speed restriction, providing for an automatic brake application if the prescribed maximum speed is exceeded at any point.

Under paragraph (c) it is evident that the medium speed restriction is provided so as to forestall automatically an automatic stop when passing a caution signal or in other words, to insure a safe speed when approaching a stop signal or danger zone. Under such conditions the train will receive an automatic stop before passing the stop signal, the stop indication being received a sufficient distance from the stop signal to insure a stop before passing the signal. Where the indicating point is close to the signal a short overlap would be provided at the rear of the signal to insure protection.

J. BEAUMONT.



The Santa Fe Has Recently Received 2,500 of These Cars

New Designs of Refrigerator Cars for the Santa Fe

Include Two Similar Types, One with Movable, the Other with
Stationary Bulkheads

FRESH FRUITS and vegetables form an important part of the eastbound traffic of the Atchison, Topeka & Santa Fe, and to care for this business the road had in service at the end of 1921, 11,751 refrigerator cars. This is ap-

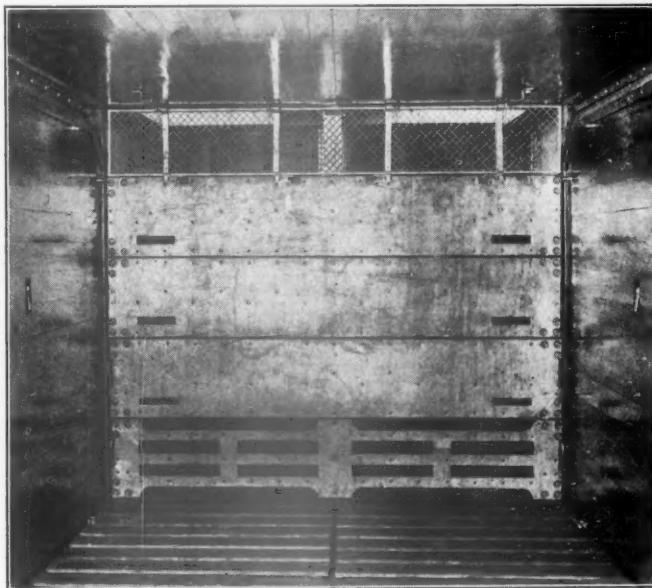
ment. As the traffic is fairly well balanced, there has been comparatively little empty mileage, in fact it has sometimes been necessary to haul empty box cars eastward.

In 1920 the Santa Fe needed refrigerator cars and in view of the excess of westward traffic at that time, a design with collapsible bunkers was prepared so that the cars could



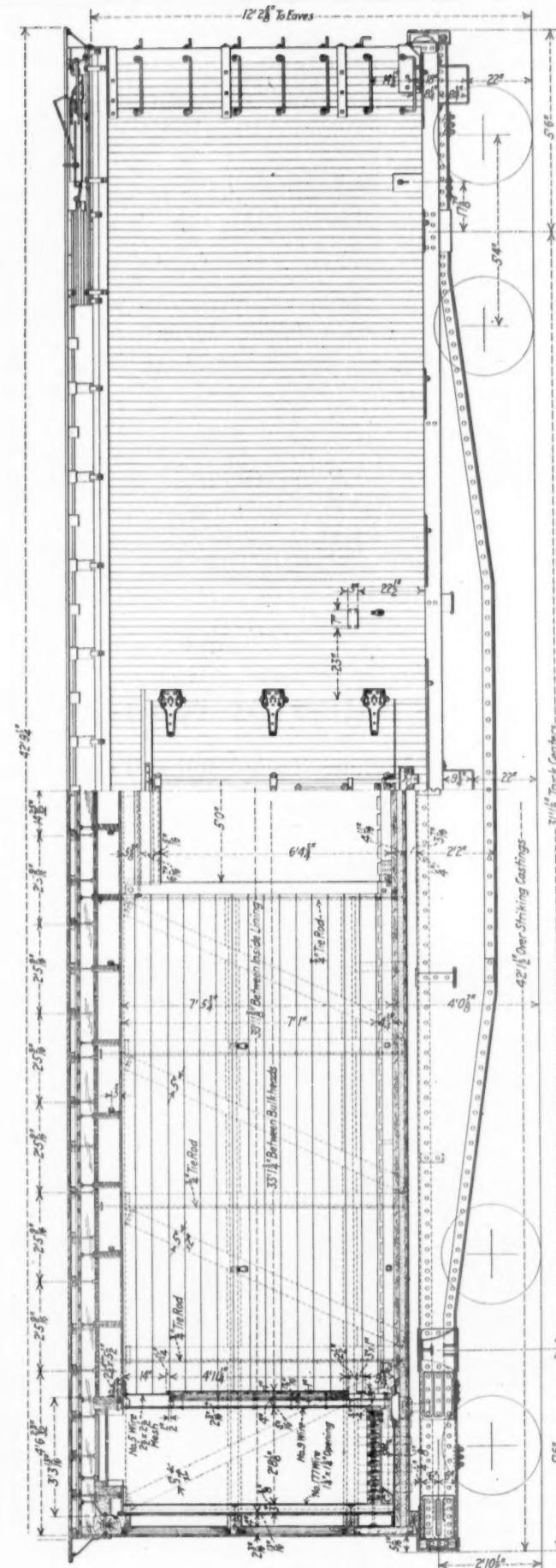
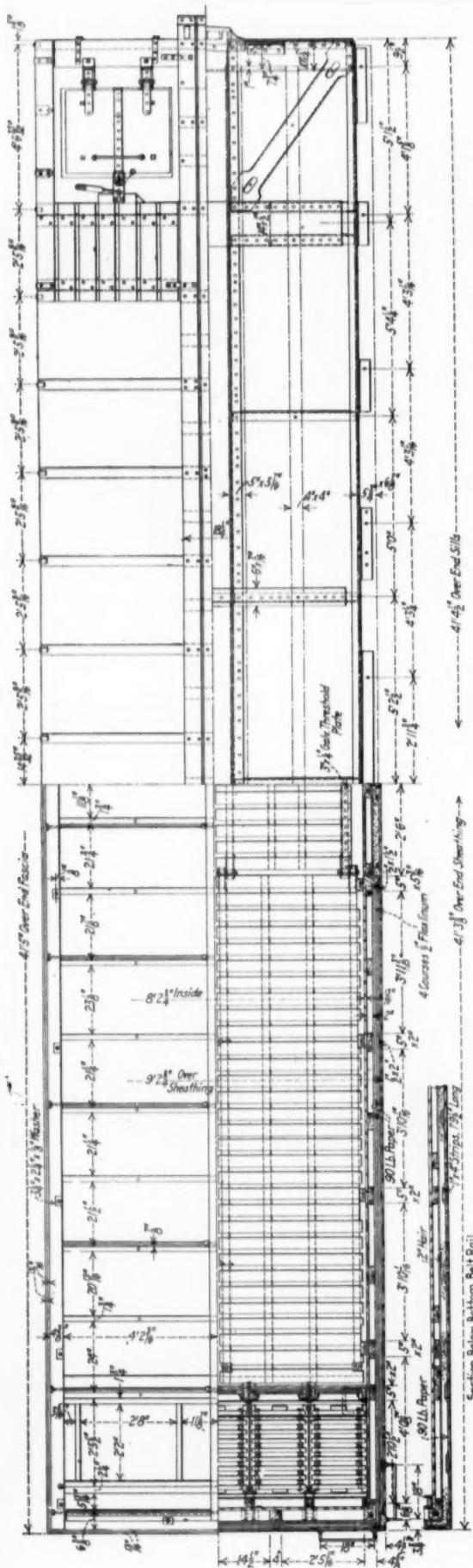
**Bulkhead Sections and Floor Racks Raised to Permit Loading
Entire Length of Car Body**

proximately 16 per cent of all the freight cars which the company owns. Compared with this is a total of 32,282 box and furniture cars. Since refrigerator cars form a comparatively large proportion of the house cars, the problem of keeping this equipment in revenue-earning service is important, and the road has followed the practice of loading suitable commodities in refrigerator cars for westbound move-



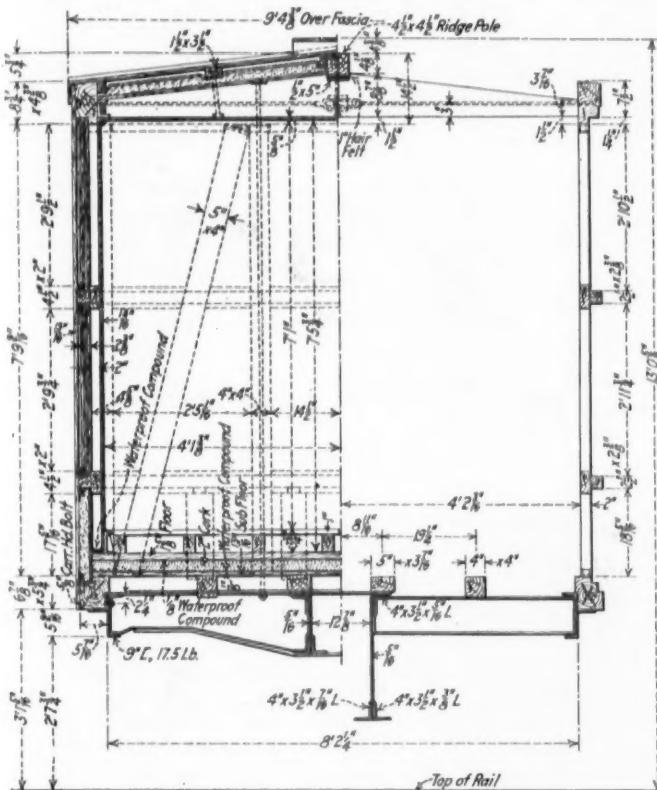
End View with Sectional Bulkhead and Floor Racks Down

haul perishables eastward and be loaded to full cubical capacity with box car freight westward. Two thousand five hundred of these cars were accordingly built, half by the



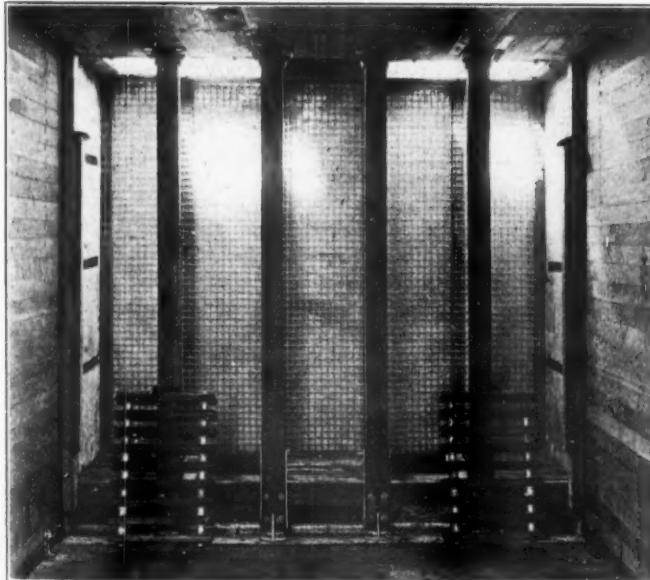
Plan and Elevation of Santa Fe Refrigerator Car with Fixed Bulkheads

American Car & Foundry Company and half by the Haskell & Barker Car Company. In the following year additional refrigerator cars were found to be required. At that time the traffic situation had changed and the box and refrigerator



Sections Through the Car Body

car equipment was adequate to handle the westward movement. The fixed bulkhead was somewhat cheaper and gave a capacity of 1,000 lb. more ice per car and was therefore

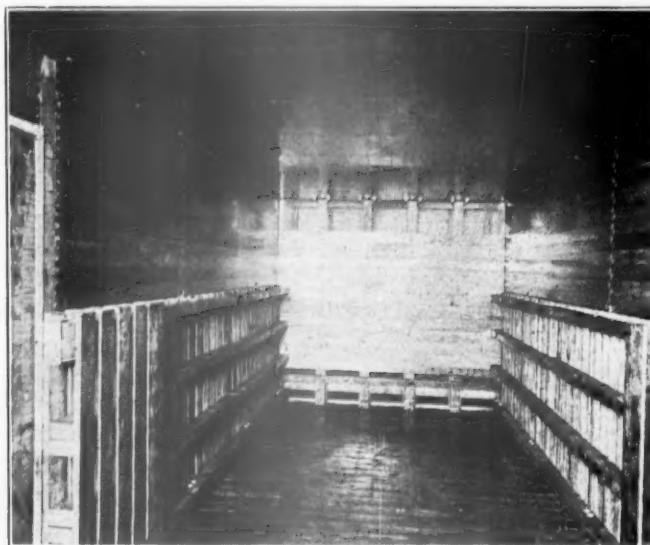


View of Bunker Before Bulkhead Is Applied, Showing Removable Ice Grates

adopted for the later design. An order of 2,500 of these cars, also divided equally between the American Car & Foundry Company and the Haskell & Barker Car Company, has recently been delivered.

Construction of Bunkers and Movable Bulkheads

The movable bulkhead applied to the first order of cars consists of four parts, each built up of $2\frac{1}{2}$ -in. boards lined on both sides with No. 20 galvanized sheets. Each section has arched screens on the inside, as shown in the illustration of the bulkhead in the raised position. A movable post is located at the center of the bulkhead to support the sections at that point. The ends of each section of the bulkhead are fitted with trunnions sliding in guides extending up the sides and horizontally just beneath the ceiling. Above the top section and hinged to the ceiling is a screen bound in a channel iron frame. When the screen is down the bulkhead sections are locked, making it impossible to enter the car through the hatches. When it is desired to raise the bulkhead the screen is swung up and secured beneath the ceiling, leaving room for the bulkhead to slide by in the guides to the overhead position. The bulkhead sections when raised are locked in place by gravity catches. The bottom of the bunker is formed by a floor rack hinged to the end so that it can be swung up out of the way when the bulkhead is raised. The back of the ice bunker consists of screens stapled to vertical wooden spacers. A recess is provided between the two center spacers to receive the movable post.



Interior of Car With Stationary Bulkheads; Floor Racks Raised

The sides of the bunker are lined with No. 24 galvanized iron sheets. A locking chain is used to hold the hatch plug down and prevent anyone entering the car through the hatch when the bulkhead is raised. The icebox pans are made of No. 12 galvanized steel with double outlet traps and drains as shown in the drawing.

Stationary Bulkheads

The stationary bulkheads used in the later cars have four intermediate posts, 4 in. by 4 in., and two side posts, 2 in. by 4 in. The tops of the intermediate posts are secured by stirrups, thus avoiding the use of a transverse member which would deflect the air current at the top of the bulkhead and retard circulation. The bottoms of these posts rest on galvanized malleable iron castings which bridge the gutters of the floor pans.

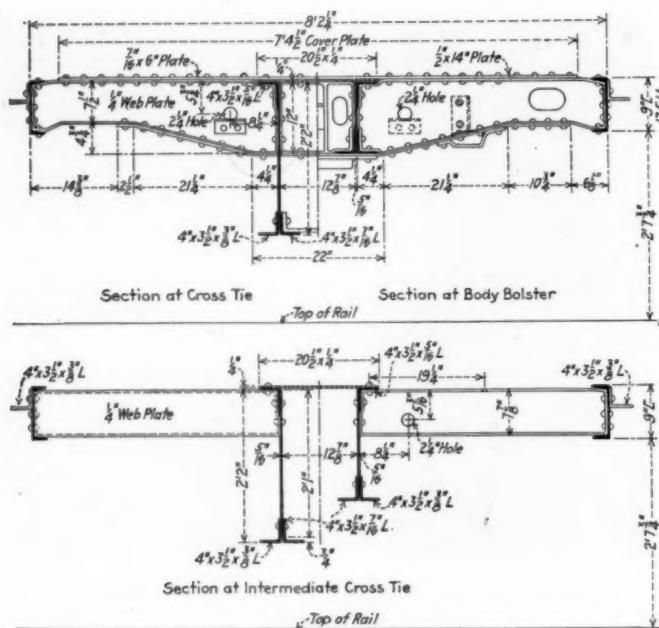
The bulkheads are insulated with two layers of $\frac{1}{2}$ -in. Insulite backed by $13/16$ -in. lining and faced on the outside of the posts by 1-in. shiplapped boards. The inner side of the bulkhead is covered with No. 24 gage galvanized sheets. The top opening of the bulkhead, which is 14 in. high, is covered with a galvanized screen of No. 15 wire, $2\frac{1}{2}$ by

2½ mesh to the inch, and a netting of No. 9 wire with .977-in. openings is applied across the inside of the bulkhead posts. The sides of the iceboxes are covered with No. 20 galvanized sheets without netting. The ends of the cars are lined with No. 28 galvanized sheets. Over these sheets 2½ in. by 3 in. wood spacers are applied which in turn hold the netting of .177-in. wire with 1¼ by 1¼-in. openings.

The ice grates are supported on 4½-in. galvanized tee bars at each of the bulkhead posts and by galvanized angles at the sides of the bunkers. The grates consist of 1½ in. by 4 in. oak pieces rounded on the top, joined with rods and malleable iron spacers. The grates can be raised if it is desired to clean the floor pans and if it is necessary to remove the grates, they can be taken out through the hatches. The outlet traps and drains are of the same type used with the movable bulkhead.

General Design

Aside from the arrangement of ice bunkers, these two orders of cars have other interesting details of construction. Both types have the same general dimensions, the length over striking plates being 42 ft. 1½ in.; the width over eaves 9 ft. 4 3/8 in.; the height from rail to top of running



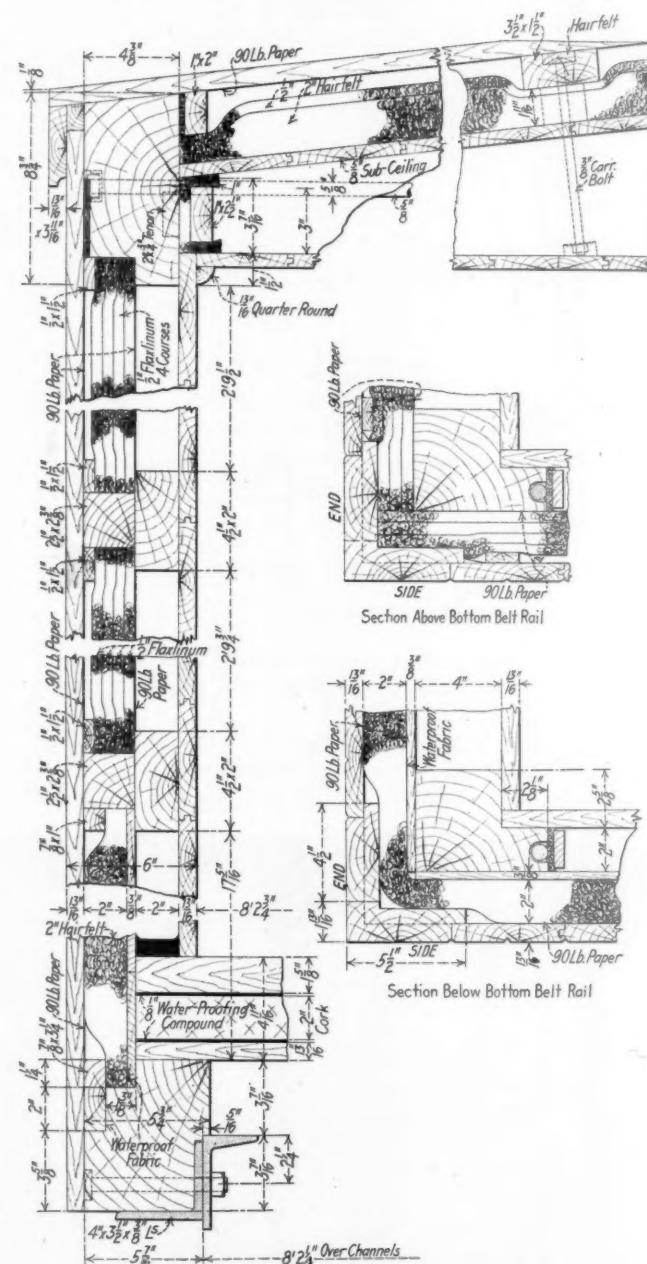
Sections Through the Underframe

board 13 ft. $\frac{5}{8}$ in., and the height inside from floor to ceiling, 7 ft. $5\frac{3}{4}$ in. The length between inside linings is 39 ft. $11\frac{3}{8}$ in., the distance between the stationary bulkheads being 33 ft. $1\frac{3}{4}$ in. and between the sectional bulkheads 33 ft. $2\frac{1}{4}$ in. When the movable bulkheads are raised, the inside length of these cars is increased to 39 ft. $2\frac{3}{4}$ in., thus adding about 370 cu. ft. to the capacity.

The cars have steel underframes with wooden superstructure. The underframe is of the fish-belly centersill type, the depth of these sills at the middle portion of the car being 2 ft. $\frac{3}{4}$ in. The web plates are $\frac{5}{16}$ in. thick and are reinforced at the top by one 4 in. by $3\frac{1}{2}$ in. by $\frac{5}{16}$ in. angle on the outside and at the bottom by one 4 in. by $3\frac{1}{2}$ in. by $\frac{3}{8}$ in. angle on the outside and by a 4 in. by $3\frac{1}{2}$ in. by $\frac{7}{16}$ in. angle on the inside. The sills are reinforced at the top by a $20\frac{1}{2}$ -in. by $\frac{1}{4}$ in. cover plate extending the entire length of the car. The side sills are 9-in. channels weighing $17\frac{1}{2}$ lb. per ft., and the end sills are of the same section. The body bolsters are of a built-up design with cast center fillers and two side diaphragms pressed from $\frac{3}{4}$ -in. steel plate. The diaphragms are spaced $7\frac{1}{2}$ in. be-

tween webs and reinforced at the top and bottom by a 14 in. by $\frac{1}{2}$ in. cover plate. There are two main cross ties, each with a single diaphragm of the same section as used in the body bolsters, reinforced by plates on the top and bottom. The three intermediate cross ties are pressed of $\frac{1}{4}$ -in. plate and are of a channel section $7\frac{1}{8}$ in. deep. Six longitudinal stringers of fir support the floor.

The construction of the body framing in general follows the usual practice, one novelty being found in the use of



Sections Showing Insulation in Car Body

turnbuckles in the horizontal tie rods at the carlines. These provide a ready means for tightening the framing at this point should it become loose in service.

The false flooring which is laid on the floor stringers is 13/16 in. thick. A layer of paper is placed over the false floor and is covered with $\frac{1}{8}$ in. of asphaltum. A layer of 2-in. cork board is then laid and is covered with $\frac{1}{8}$ in. of asphaltum and one layer of paper before the $1\frac{5}{8}$ -in. top floor is applied. The floor racks used in both types of cars are the same with supports $3\frac{3}{4}$ in. high and 1 in. slats.

The sides of the car have $13/16$ in. inside lining next to

which is a 2-in. air space. Between the lower belt rail and the side stringers hairfelt insulation is used. A $\frac{3}{8}$ -in. blind lining is applied which overlaps the floor at the bottom and the lower belt rail at the top. Next to this a layer of waterproof fabric is placed and the hairfelt is then inserted between the fabric and the 13/16-in. outside sheathing. Waterproofing compound is poured between the blind lining and the inside lining to a depth of $\frac{3}{4}$ in. over the floor to seal the joints between these parts. Above the lower belt rail the insulation in the sides and ends is made up of four layers of $\frac{1}{2}$ -in. flaxlinum covered with a layer of paper.

The side of the door opening is 5 ft. 0 in. by 6 ft. 4 $\frac{3}{4}$ in. The doors are made double with siding on the outside and lining on the inside and with insulation to correspond with that in the sides of the car.

A $\frac{5}{8}$ -in. blind ceiling is laid over the top of the carlines and hairfelt insulation, held in place by a nailing strip, is applied to cover the joints between the blind ceiling, the lining, the ceiling and the side plate. The $\frac{5}{8}$ -in. ceiling is then applied under the carlines. The insulation in the

lining, roofing and flooring. All iron fittings of the car receive two coats of paint, the same as used on the trucks and underframe.

The interior of the sides, the ceiling and all exposed wood in the interior of the car body is painted with three coats of raw linseed oil mixed with an equal quantity of Sipes Japan. All nails are set and puttied after applying the first coat of oil and Japan. The floors are finished with two coats of raw linseed and Japan.

The cars are carried on trucks with 5 in. by 9 in. journals, having Andrews cast-steel truck side frames and cast-steel truck bolsters fitted with the Standard Car Truck Company's lateral rollers. A.R.A. type D couplers with 6 in. by 8 in. shanks are applied, connecting to cast-steel coupler yokes by a transverse key. The draft gear is the Miner friction type A-18-S. The brake equipment is the Westinghouse Air Brake Company's schedule KD-1012. Other specialties applied to the cars include Creco brake beams and Imperial uncoupling arrangement.

Court of Appeals Reverses Pennsylvania Injunction Decree

THE RECENT RULING of Judge George C. Page of the United States District Court at Chicago upholding the Pennsylvania in its legal controversy with the Railroad Labor Board has been reversed by the United States Circuit Court of Appeals. Judge Page's decree was abridged in the *Railway Age* of April 29, page 1021, and the hearings before the Court of Appeals were similarly described in the *Railway Age* of June 10, page 1339.

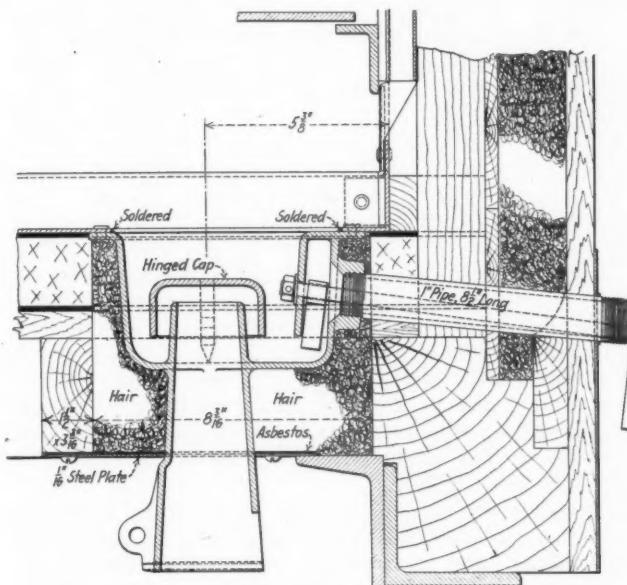
The latest ruling in this controversy, which was written by Judge Alschuler who with Judges Baker and Evans heard the case, followed to a large extent the analysis of Judge Page's decision made by Ben W. Hooper, chairman of the Railroad Labor Board, and outlined in the *Railway Age* of May 13, page 1124.

After reciting the history of the case, the Appellate Court's decision answers in detail the contentions of the Pennsylvania and the ruling of the lower court. The following is an abstract of the latest decree from which have been taken practically all of the supporting arguments of the court.

The Pennsylvania contends that if Title III of the Transportation Act makes the decisions of the Labor Board binding upon the carriers and enforceable by appropriate proceedings it is unconstitutional. Suffice it to say, there is not here involved any proceedings for the enforcement on the carrier of a decision of the Board as to wages or working conditions. Indeed, the action of the Board most complained of by the Pennsylvania was in furtherance of securing an agreement between the carriers and their employees with the probable alternative that if ultimately they failed to agree, the Board itself will decide upon and prescribe rules and working conditions. If and when this stage is reached and one or more of the parties refuse to obey the Board's decision, it will be time enough to interpose the defense of unconstitutionality to any undertaking to enforce the decision as one binding and conclusive on the parties.

The decree (of the lower court) seems to be predicated upon the assumption that the action of the Board in these matters was wholly under the provisions of Section 301 and that in the absence of a joint submission of the dispute to the Board, it was wholly without jurisdiction. Section 301 by its terms is applicable to "any dispute between the carrier and the employees." If the concluding sentence of the section, providing that in case the dispute is not decided in conference, it shall be referred "by the parties" thereto to the Board authorized to deal with the dispute, means that unless both parties agree so to refer it, the Board can not in any event deal with the matter, Title III might as well not have been enacted; for if the right of the Board to act depended upon the joint submission of the parties to the dispute, it lay in the power of either party to block utterly any action by the Board by simply refusing to join in the submission.

Referring to the Pennsylvania's contention that there was involved no dispute of which the Board could take cognizance, or of which under Title III it had jurisdiction, the



Double Outlet Drain and Trap

ceiling is $2\frac{1}{2}$ in. of hairfelt in one 2-in. and one $\frac{1}{2}$ -in. layer. The hairfelt is covered with a layer of paper and a 13/16-in. sub-roof is placed over it, supported by the ridge pole and side plate and one intermediate purline. The Standard Railway Equipment Company's outside flexible metal roof, with No. 24 galvanized sheets in the center of the car and No. 20 gage around the hatches is laid over the sub-roof.

The light weight of the cars is 55,000 lb., being practically the same for both designs.

Painting

All parts coming in contact on the trucks and underframes are given one coat of carbon paint before assembling. The finished underframe is painted with three coats of carbon ready-mixed paint and the top of the underframe coated with Lucas car roof cement. The trucks are protected with two coats of carbon paint.

The sides of the car are finished with three coats of refrigerator yellow and the ends with three coats of mineral paint of the Santa Fe standard color. The roof boards, outside flexible metal roof and the hatch covers receive one coat of mineral paint. This is also applied on all tenons and in all mortises on both ends of posts and braces, on shoulders at all tenons and post and brace castings and in all places where two pieces of wood touch each other, except siding,

Appellate Court's decision calls attention to the existence of a nationwide controversy over wages, rules and working condition *prior* to the creation of the Board, adding:

The fact that the dispute existed long before the Board was created made it none the less a dispute cognizable by the Board in continuing to exist after the Board began to function. It is thus apparent that at the very outset, this dispute as to rules and working conditions *was* before the Board and was so treated by both parties to the dispute, including the Pennsylvania. Under these circumstances, it would be immaterial whether it got there by *ex parte* or joint submission or on the initiative of the Board itself. Title III is broad and remedial and no fine jurisdictional lines should be drawn to circumscribe its scope or by procedural technicalities to limit its application.

This will answer also the Pennsylvania's contention that the Board had no power to order (as in Decision No. 2), that existing rules and working conditions, until further order, remain as they then were under the National Agreement. The whole subject matter being before it, it could make such temporary order concerning it as in its judgment the exigencies of the case required.

Referring to the Pennsylvania's contention that "the matter of the election of representatives by the employees is wholly procedural and is something with which the Board is in no wise concerned and its action in this regard was wholly beyond its jurisdiction," the Appellate Court says:

The force of the contention is not apparent. Title III confers upon the Board important duty and prescribes in Section 308 that it "may make regulations necessary for the efficient execution of the functions vested in it by this title." This alone, if indeed in the very nature of things it were not necessarily so, would empower the Board to make provision for determining whether those purporting to represent disputants before the Board do in fact so represent them. If it is claimed that a pending dispute has been adjusted between the parties to it, it is very essential that the body before whom the dispute is pending assure itself of the authority to so dispose of the controversy of those who purport to act for the parties. This is especially true where one side of the dispute is a body of individuals such as employees of a great carrier. It was eminently proper that the Board, either by general rule or otherwise, indicate how in its best judgment such representation should be manifested and the election conducted.

The question of whether the employees may be represented by an organization as held by the Board or whether they may be represented only by individuals who are employees of the carrier as contended by the Pennsylvania "is not properly a question for account," the Appellate Court held. "Even though the court were of the belief that more just and true representation would result through the method of the Pennsylvania, it is not for the court to substitute its opinion for that of the Board in matters by law committed to the Board," the decree added.

In closing the decree, the Appellate Court said:

"Under the foregoing views, it follows that the Labor Board did not, as to the matters involved, transcend its power and functions under Title III and that relief under the bill should have been denied. It will not be necessary to consider the contention earnestly pressed for the Board, that the action is in effect one against the United States, which has not given its consent thereto, and must for that reason be dismissed. The decree of the District Court is reversed with directions to dismiss the bill."

Pennsylvania Will Appeal

The Pennsylvania has announced that it will appeal from the Circuit Court decision and take the case to the United States Supreme Court. W. W. Atterbury, vice-president in charge of operations, addressed a statement to this effect to the employees under date of July 21.

Freight Car Loading

WASHINGTON, D. C.

FREIGHT CAR LOADING during the week ended July 15, the second week of the shopmen's strike, totaled 860,907 cars, an increase of 86,023 as compared with the corresponding week of 1921 and a decrease of 81,944 as compared with 1920. This represented a decrease of about 17,000 cars as compared with the loading during the last two weeks of June, some of which may be attributed perhaps to the strike, the principal reduction being in coal loading, which was 77,334 cars as compared with 96,960 during the week of June 24, and 94,748 during the week of July 1. As compared with the last week in June increases were shown in the loading of grain and grain products, livestock and ore, but there were small reductions in the loading of coke, forest products, merchandise and miscellaneous freight. As compared with the corresponding week of last year increases were shown in all classes of commodities except grain and grain products, and coal and in all districts except the southwestern. The summary as compiled by the Car Service Division is given below.

The freight car surplus for the period from June 30 to July 8 averaged 239,160 as compared with 239,225 for the period ending June 30. Of the total, 147,558 were coal cars and 60,101 were box cars. The number of bad order cars also showed a further reduction during the half month ended July 1 to 14.3 per cent of the total as compared with 14.6 on June 15.

REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. WEEK ENDED SATURDAY, JULY 15, 1922

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse.	Miscellaneous	Total revenue freight loaded		
										1922	1921	1920
Eastern	1922	10,752	3,229	7,744	1,838	5,603	7,110	70,034	91,126	197,436	187,705	228,266
	1921	9,500	2,677	42,142	819	4,454	1,769	56,503	69,841	168,551	153,898	192,082
Alleghany	1922	3,156	2,455	15,888	4,483	2,987	11,657	49,934	77,991	153,933	31,650	34,618
	1921	3,824	2,516	44,494	1,847	2,527	7,073	41,783	49,834	4,202	108,740	129,127
Pocahontas	1922	236	215	22,174	272	1,416	62	5,336	5,152	3,714	113,877	168,504
	1921	253	222	20,800	92	1,394	23	19,350	1,192	36,589	40,763	116,627
Southern	1922	5,098	2,549	16,266	884	215	34,056	34,697	122,691	10,627	12,387	62,993
	1921	4,562	2,215	18,904	254	13,837	215	34,056	34,697	10,627	12,387	62,993
Northwestern	1922	10,449	8,722	7,215	1,672	13,672	47,050	30,280	40,586	159,646	113,877	127,261
	1921	8,898	6,372	6,451	493	10,040	20,823	27,251	33,549	31,307	251,748	292,891
Central Western	1922	13,478	10,333	5,195	376	6,669	1,719	46,168	46,168	117,452	116,627	942,851
	1921	20,618	8,335	14,213	171	5,616	696	31,307	35,671	251,748	277,884	358,736
Southwestern	1922	5,722	2,713	2,852	173	8,424	372	11,668	56,800	78,222	347,254	325,449
	1921	9,528	2,130	4,284	131	5,961	800	15,111	24,442	61,198	22,203	29,225
Total Western Dists.	1922	29,649	21,768	15,262	2,221	28,765	49,141	79,287	112,203	338,296	292,891	358,736
	1921	39,044	16,837	24,948	795	21,617	22,319	73,669	93,662	10,627	12,387	62,993
Total all roads	1922	48,911	30,216	77,334	9,698	58,121	69,162	241,180	326,285	860,907	774,884	942,851
	1921	57,183	24,467	151,288	3,807	43,829	31,399	211,163	251,748	347,254	277,884	358,736
Increase compared	1921	5,749	.....	5,891	.....	14,292	37,763	30,017	74,537	86,023	.....	.....
Decrease compared	1921	8,272	.....	73,954	.....	1,321	.....	60,308	20,969	81,944	.....	.....
Decrease compared	1920	14,944	3,573	.....	.....	9,060	.....	241,180	326,285	860,907	774,884	942,851
July 15	1922	48,911	30,216	77,334	9,698	58,121	69,162	210,140	271,939	718,319	640,535	796,191
July 8	1922	35,267	21,847	68,996	9,665	44,736	55,729	247,111	328,035	876,896	776,079	891,621
July 1	1922	41,897	28,546	94,748	10,361	61,422	64,776	249,193	325,337	877,856	775,447	911,503
June 24	1922	38,411	29,934	96,960	9,466	64,271	64,284	248,044	324,902	860,772	775,328	916,736
June 17	1922	39,333	29,151	92,136	9,302	64,082	53,822	248,044	324,902	860,772	775,328	916,736

Plan for Coal Distribution and Price Restraint

Presidential Committee to Be Appointed—I. C. C. Declares Emergency and Issues Priority Orders

WASHINGTON, D. C.

THE ADMINISTRATION'S PLAN for controlling the distribution of the available coal supply to the most essential consumers, including the railroads, which is also designed to exercise a restraining influence upon coal prices during the period of coal shortage, as worked out by Secretary Hoover in collaboration with representatives of the Interstate Commerce Commission and other governmental departments and the American Railway Association, and coal operators was announced on Monday and the Interstate Commerce Commission on Tuesday issued two service orders, declaring the existence of a national emergency because of unfavorable labor conditions and shortage of fuel supply which furnish the necessary basis of legal authority to carry the plan into effect. Service Order No. 22, numbered to follow the series of service and priority orders issued by the commission in 1920, directs the railroads to forward traffic by the most available routes regardless of routing orders, and is intended to help clear up the congestion which has developed on certain lines. Service Order No. 23 directs the railroads east of the Mississippi to give preference and priority to food, feed, livestock, perishable products, coal, coke and fuel oil and preference in the use of coal cars for the transportation of coal over other commodities. It also sets up a classification of priority of coal for various purposes.

An outline of the general plan, as given out by Secretary Hoover on Monday after it had been approved by the Attorney General and accepted in principle by representatives of the coal operators, is as follows:

1. A committee in Washington, to be appointed by the President, of representatives of the Department of Commerce, the Interstate Commerce Commission, the Department of Justice, and the Department of the Interior, to be designated the Presidential Committee. This committee is to have general supervision of the measures to be taken hereunder and to authorize the execution of such of these measures as may be necessary from time to time.

2. The Administrative Committee, comprising representatives of the Presidential Committee together with representatives of operators, representatives of the railways, and, where necessary, representatives of the larger consuming groups.

3. The Presidential Committee will establish a representative in each coal producing district.

4. The Presidential Committee will appoint a committee of operators in each district to be nominated by the district operators' association or independent operators (in case of failure of the operators to take such action the Presidential Committee may appoint such operators as they see fit on such committee). The members of these district committees may be changed as determined upon by the Presidential Committee.

5. The Presidential Committee will co-operate with the Interstate Commerce Commission in carrying out preferential orders issued by the commission.

6. The governmental representatives of the districts with the co-operation of the district committees shall advise the agencies of the Interstate Commerce Commission as to local car movement to effect the purpose of this plan.

7. The operators will proceed with their usual business until they are affected by preference orders.

8. It is expected that the district committees under authority of the Presidential Committee will recommend the allotment of cars on the basis of those who conform to the fair prices to be agreed upon with the Presidential Committee.

9. When the operators demand, then suitable guarantees shall be given for payment by persons buying under priority orders.

10. The railroads will be requested to appoint a representative to deal with purchases of railway fuel.

11. The basis of prices agreed upon between the operators and the Secretary of Commerce on June first are to be maintained, except where varied by the Presidential Committee, and this same basis of price determination shall be applied to all districts which are so far not co-operating.

The whole of the above was called tentative, pending further consideration by the Interstate Commerce Commission, the Department of Justice, Department of Interior, and the Department of Commerce.

Secretary Hoover Busy on Situation

While the President was working on the railroad strike Secretary Hoover busied himself with the coal situation. On Thursday he talked with Commissioner Aitchison, who is in charge of car service matters for the Interstate Commerce Commission, after which the commissioners held a conference among themselves and on Friday Mr. Hoover announced that "plans had been formulated for the co-operation of the Department of Commerce and the Interstate Commerce Commission and the Department of Justice by which, with the co-operation of responsible operators, the control of price and distribution can be effected." The plan was placed before the Department of Justice for its consideration and further conferences between Secretary Hoover, Attorney General Daugherty and Chairman McChord and Commissioner Aitchison of the commission were held on Saturday and Sunday.

Mr. Hoover also called a meeting of the district representatives from the producing Virginia, West Virginia, Tennessee, Kentucky, Pennsylvania and Alabama districts for Monday to consider the questions of price and distribution.

In explaining the need for a coal distribution plan, Mr. Hoover emphasized the necessity of taking care of the railroads as well as of the public utilities, industries producing necessities, public institutions, etc. Some of the railroads, he said, have a three months' supply of coal, while others will need assistance within a week or so. Some have made arrangements for importing coal. British coal is being laid down at American ports at prices ranging from \$6.50 to \$7.75 and 600,000 tons of shipping have been engaged for the transportation of coal to this country from abroad. Forty-three Shipping Board vessels having an approximate tonnage of 350,000 tons have been chartered through the Shipping Board to transport coal from Wales and the east coast of England and the board has announced that it could place a sufficient number of its own ships in service within a short time to guarantee the importation to this country of at least 500,000 tons a month.

It is estimated that 8,000,000 to 10,000,000 tons of coal will be needed to supply the districts served through the Lake Superior docks during the balance of the season of navigation while the needs of the entire lake district are estimated at 17,000,000 to 25,000,000 tons.

Plan Approved by Attorney General

Attorney General Daugherty announced on Monday that he had submitted an opinion to Secretary Hoover sustaining every phase of his plan with reference to its legality, in part as follows:

"I have before me your letter of the 21st instant in which you inquire whether certain steps which you propose to take to safeguard the public interests in the face of the impeding coal famine run counter to the law of Congress.

"As I understand it, your plan is to form associations acting under your directions whose sole purpose will be to meet the emergency in distribution and stop profiteering; and at the proper time you intend to apply to the Interstate Commerce Commission to promulgate rules governing car distribution during the existing shortage, to the end that the available equipment can be placed at mines affording the greatest opportunity of service and willing to charge for its coal no more than is fair and just. As between

two mines whose output is the same, your plan contemplates, during the existing shortage, favoring the mine in the supply of cars which charges the public fair prices as against the mine which allows its greed to exact whatever can be obtained, however unwarranted and extortiate the price may be. You have no purpose other than to promote the welfare of the public by inaugurating a plan of distribution designed to maintain national life itself and to restrain extortion by the stern hand of repression. Your idea is to have both operators and miners furnish you with statistics along the lines just mentioned, thus enabling you to place before the commission from time to time whatever information is necessary to enable it to give proper and intelligent directions. In thus acting you intend to represent the commission as one of its designated agencies, or to go before it in any other capacity, whichever method meets with its approval. In view of all these conditions causing the present emergency, the inevitable result of which is to disrupt and demoralize interstate commerce, you inquire whether the plan you have outlined would be illegal and whether authority exists for its adoption and enforcement.

"In my opinion the plan is entirely legal. I fail to see wherein any law of Congress will be violated. The interests of the public are deserving of paramount consideration, and I have no misgivings in giving it my unqualified approval. Moreover I feel convinced that full and ample authority exists for its adoption and effective enforcement. If the Interstate Commerce Commission finds the existence of an emergency such as you describe, that body has ample and unquestioned authority to provide such rules and regulations as will enable the plan you suggest to be carried into operation.

"In concluding I want to say that I have no hesitancy in advising you that in my opinion where and when an emergency exists on account of the shortage of coal for use in interstate commerce and in the transportation of the mails and when the price of coal for such purposes and for the general necessities of the people has been unjustifiably and unbearably increased by operators who produce a large supply, associations such as your plan contemplates to act with and under governmental agencies to meet the existing emergency, more equitably to distribute coal, and to prevent extortion in the price thereof while acting with and under governmental agencies for the purposes aforesaid, are legal and do not violate any provision of the so-called Sherman anti-trust law or any other federal law.

"In carrying out such plan for the sole purpose you propose all persons, firms, or corporations chosen by governmental agencies to assist you, as long as they act in good faith to carry out such plan with and under governmental agencies and not otherwise, will violate no law of the United States."

District Associations Express Approval

General approval of the necessity for a plan to maintain fair prices and distribution of coal was expressed by representatives of the producing bituminous fields in conference with Secretary Hoover on Monday, subject to reference back to the district associations concerned. An executive committee composed of the chairman of the district delegations considered details of the plan and reported back to the whole conference in the afternoon. The executive committee also appointed a smaller drafting committee which met with officials of the Interstate Commerce Commission and with representatives of the American Railway Association in the afternoon and discussed the general plan for coal control and discussions were conducted under the chairmanship of Secretary Hoover, in collaboration with Commissioner Aitchison of the Interstate Commerce Commission, Blackburn Esterline of the Department of Justice, Director Smith of the Geological Survey, and Acting Director Holbrook of the Bureau of Mines for the Department of the Interior, the representatives of the coal operators, M. J. Gormly, chairman of the Car Service Division of the American Railway Association, and J. C. Davis, director general of railroads.

Under the Hoover plan the Interstate Commerce Commission's emergency powers over car distribution are to be used not only to allocate coal to the most essential consumers but also to meet a situation with which the government found it impossible to deal at the time of the great demand for coal in 1920, that is, to control prices within reason by withholding cars from operators who refuse to observe the voluntary agreement entered into with Secretary Hoover a few weeks ago to observe a scale of maximum prices based on the Garfield scale with modifications, which in most instances means \$3.50 a ton at the mines. While there is still a large surplus of coal cars, because of the congestion which has

developed in some of the coal fields the surplus cars are not where they are needed and shortages have occurred at a few points during the past two or three weeks. The effect of the plan, it is understood, will be that no very strenuous efforts will be made to place cars for those who will not observe the price agreement and it is also expected that the plan will necessarily remain in effect during the balance of the year and will therefore be available if a real shortage of cars or congestion should develop after a settlement of the coal strike, which is regarded as inevitable sooner or later. Mr. Hoover had received reports that operators in one or two districts had refused to co-operate in the plan of voluntary price restraint and that certain operators in West Kentucky last week were charging as much as \$7.50 a ton and on Monday had raised this to \$13 a ton, although a group of operators in the same district were observing the \$3.50 maximum. Also a minority of irresponsible operators in other districts have broken away from the agreement. "The responsible operators," Mr. Hoover said, "are holding to the price. On the other hand some panicky railway buyers are sending out orders offering \$8 at the mines. The plan for restraint of prices to the Garfield basis threatens to break down through the above influences."

Mr. Hoover explained that the plan intends merely to make the best use of the available coal and does not guarantee the production of a pound of coal but that for the present the government has exhausted its resources in its efforts to settle the coal strike.

Service Order No. 22

The orders issued by the commission under the new plan are as follows:

The subject of routing of freight traffic being under consideration, and it appearing to the Commission, that an emergency exists upon the lines of all carriers by railroad in the United States subject to the Interstate Commerce Act, which requires immediate action; and that each of such carriers, by reason of unfavorable labor conditions, and shortage of fuel supply, is unable to transport the traffic offered it so as to properly serve the public.

Therefore, in order best to promote the service in the interest of the public and the commerce of the people, it is ordered and directed:

1. That from and after July 26, 1922, and until the further order or direction of this Commission, all said common carriers by railroad are hereby directed to forward traffic to destination by the routes most available to expedite its movement and prevent congestion, without regard to the routing thereof made by shippers or by carriers from which the traffic is received, or to the ownership of the cars, and that all rules, regulations, and practices of said carriers with respect to car service are hereby suspended and superseded in so far only as conflicting with the directions hereby made.

2. That inasmuch as such disregard of routing is deemed to be due to carriers' disability, the rates applicable to traffic so forwarded by routes other than those designated by shippers, or by carriers from which the traffic is received, shall be the rates which were applicable at date of shipment over the routes so designated, unless the rates applicable over such designated routes are higher, in which event the rates applicable over the route of movement will apply.

3. That in each instance where the traffic is routed, or rerouted by carriers by railroad under the authority of this order, the carrier responsible for such routing or rerouting, shall, within 24 hours thereafter deposit in the United States mail, a notice addressed to the consignee of the traffic, stating: the car numbers and initials, places and dates of shipment, the routing, and respective routes over which the traffic is moving and that charges for the transportation of the traffic, including transportation, and schedules of rates, fares, and charges, as those terms are defined in said Act, will be the same as they would have been if such routing, or rerouting had not taken place, unless, as above provided for, the rates applicable over the route the traffic moves is less.

4. That in the case of shipments in private cars, which are subject to equalization of empty mileage, and also of fruits and vegetables, live poultry and other shipments customarily reconsigned upon instructions of the consignor, a telegraphic notice of the diversion shall be sent to the consignor by the carrier responsible therefor.

5. That in executing the directions of the Commission contained in this order, the common carriers involved shall proceed without reference to contracts, agreements, or arrangements now existing between them with reference to the divisions of the rates of transportation applicable to said traffic; that such divisions shall be, during the time this order remains in force, voluntarily agreed upon by and between said carriers, and that, upon failure of the carriers to so agree, said divisions shall be hereafter fixed by the Commission in accordance with pertinent authority conferred upon it by said Act.

6. That copies of this order and direction be served upon all carriers by railroad in the United States, subject to the Interstate Commerce Act, and that notice of this order be given to the general public by depositing a copy of the order in the office of the Secretary of the Commission in Washington, D. C.

Service Order No. 23

It appearing, In the opinion of the Commission that an emergency which requires immediate action exists upon the lines of each and all the common carriers by railroad subject to the Interstate Commerce Act, east of the Mississippi River, including the west bank crossings thereof, and because of the inability of said common carriers properly and completely to serve the public in the transportation of essential commodities, It is ordered and directed;

1. That each such common carrier by railroad, to the extent that it is currently to be unable promptly to transport all freight traffic offered to it for movement, or to be moved over its line or lines of railway shall give preference and priority to the movement of each of the following commodities: food for human consumption, feed for live stock, live stock, perishable products, coal, coke and fuel oil.

2. That to the extent any such common carrier by railroad is unable under the existing interchange and car service rules, to return cars to its connections promptly, it shall give preference and priority in the movement, exchange, interchange and return of empty cars intended to be used for the transportation of the commodities specially designated in paragraph numbered 1 hereof.

3. That any and all such common carriers by railroad which serve coal mines whether located upon the line or lines of any such railroad or customarily dependent upon it for car supply, herein termed coal-loading carriers, be, and they are hereby, authorized and directed whenever unable to supply all uses in full, to furnish such coal mines with open top cars suitable for the loading and transportation of coal, in preference to any other use, supply, movement, distribution, exchange, interchange or return of such cars; *provided*, that the phrase "suitable for the loading and transportation of coal" as used in this order shall not include or embrace flat (fixed) bottom gondola cars with sides less than 36 inches in height, inside measurement, or cars equipped with racks, or cars which, on July 1, 1922, had been definitely retired from service for the transportation of coal and stenciled or tagged for other service.

4. That all such common carriers by railroad other than coal-loading carriers, herein termed non-coal-loading carriers be, and they are hereby authorized and directed to deliver daily to a connecting coal-loading carrier or carriers, or to an intermediate non-coal-loading carrier for delivery through the usual channels to a coal-loading carrier, or carriers, empty coal cars up to the maximum ability of each such non-coal-loading carrier to make such deliveries and of each such connecting coal-loading carrier to receive and use the coal cars, so delivered for the preferential purposes herein set forth.

5. That all such common carriers by railroad be, and they are hereby, authorized and directed to discontinue the use of cars suitable for the loading and transportation of coal, for the transportation of commodities other than coal, so long as any coal mine remains to be served by it with such cars; and as to each non-coal-loading carrier, so long as deliveries of any such cars to connecting carriers may be due or remain to be performed under the terms of this order.

6. That all such common carriers by railroad be, and they are hereby, authorized and directed, to place an embargo against the receipt of coal or other freight transported in open top cars suitable for coal loading, by any consignee, and against the placement of such open top cars for consignment to any consignee, who shall fail or refuse to unload such coal or other freight so transported in coal cars and placed for unloading, within 24 hours after such placement, until all coal or other freight so transported in coal cars and so placed has been unloaded by such consignee and shall notify the Commission of such action. This authorization and direction as to embargoes shall not interfere with the movement of coal to tidewater or the Great Lakes for transshipment to water, nor shall it apply where the failure of the consignee to unload is due directly to errors or disabilities of the railroad in delivering cars.

7. That in the supply of cars to mines upon the lines of any coal-loading carrier, such carrier is hereby authorized and directed, to place, furnish and assign such coal mines with cars suitable for the loading and transportation of coal in succession as may be required for the following classes of purposes, and in following order of classes, namely:

Class 1. For such special purposes as may from time to time be specially designated by the Commission or its agent therefor. And subject thereto:

Class 2. (a) For fuel for railroads and other common carriers, and for bunkering ships and vessels; (b) for public utilities which directly serve the general public under a franchise therefor, with street and interurban railways, electric power and light, gas, water, and sewer works; ice plants which directly serve the public generally with ice, or supply refrigeration for human foodstuffs; hospitals; (c) for the United States, state, county, or municipal governments, and for their hospitals, schools, and for their other public institutions—all to the end that such common carriers, public utilities, quasi public utilities, and governments may be kept supplied with coal for current use for such purposes, but not for storage, exchange, or sale. And subject thereto:

Class 3: (As to each coal-loading carrier which reaches mines in Pennsylvania, Ohio, West Virginia, Kentucky, Tennessee, and Alabama.) For bituminous coal consigned to any Lake Erie port for transshipment by water to ports upon Lake Superior. And subject thereto:

Class 4: (As to all such common carriers by railroad.) Commercial sizes of coal for domestic use. And subject thereto:

Class 5: Other purposes.

No coal embraced in Classes 1, 2, 3, or 4, shall be subject to re-consignment or diversion except for some purpose in the same class or a superior class in the order of priority herein prescribed.

8. That all rules, regulations and practices of said common carriers by railroad with respect to car service as that term is defined in said act are hereby suspended so far as they conflict with the directions hereby made.

9. That this order shall be effective from and after July 26, 1922, and shall remain in force until the further order of the Commission.

10. That copies of this order be served upon the carriers hereinbefore described, and that notice of this order be given to the general public described, by depositing a copy hereof in the office of the Secretary of the Commission at Washington, D. C.

The commission is also expected to issue special orders from time to time to expedite particular shipments designated by the district committees. It is hoped that the routing order will assist in a short time in relieving the congestion which is said to have been caused to some extent by the desire of the coal-originating railroads to route cars in such a way as to save for themselves the long haul. The priority order, in addition to providing for the most essential uses for coal also gives recognition in Class 3 to the needs of the Northwest for shipments via the lakes.

The Intent of the Service Orders

While the commission's orders were heralded in some of the newspapers as amounting practically to "government control of the railroads" similar to that exercised during the war, an examination of the orders shows that they do not become applicable except to the extent that a road may be "currently unable promptly to transport all freight traffic offered to it for movement" and such a condition does not exist on many roads, although it would be very likely to exist very generally if a full production of coal were suddenly to be offered to the roads by a resumption of mining in the union fields. One of the most important, if not the most vital of the considerations which led to the issuance of the order and the setting up of the plan of distribution was the fact that whereas coal production had fallen to approximately 3,600,000 tons a week the railroad requirements alone were approximately 2,500,000 tons a week and some roads had only a few days' supply left. Therefore unless something was done at once many railroads that would not have been materially affected by the shopmen's strike for some time would have been disabled by shortage of fuel. It was also apparent that the effects of the railroad strike were being concentrated where they would have the most effect on the coal situation.

While the plan does not provide for repairing a single car or engine nor for digging a pound of coal it is intended to prevent efforts to stock up with coal on the part of those who might be able to do so by offering high prices, at the expense of other consumers who need it currently. While many telegrams received in Washington indicate apprehension on the part of shippers of other commodities that use open-top cars they will not in general be affected as long as the surplus of such cars exists unless they are so located as to come into competition with a coal mine for the cars in a particular locality. This part of the order will have more effect later if coal production is increased. The commission's order said nothing about withholding cars from the profiteers, which the Attorney General's opinion said would be entirely legal, but it is understood that that object will be accomplished in the practical administration of the plan.

R. H. Aishton, president of the American Railway Association, has been spending a large part of his time in Washington for some weeks and is in charge of the situation for the railroads.

The following telegram has been sent by Commissioner Aitchison to the various state commissions:

Commission desires to know whether if local developments connected with our general service orders require we can rely on having active assistance your Commission. This possibly may involve survey certification and policing certain local needs under priority orders issued or to be issued. Emergency most acute and requires best efforts of all under common plan if distress which will come is to be mitigated.

Coal Distribution Committee

The Presidential committee proposed in the plan was appointed on Wednesday when the President requested the Attorney General, the Secretary of the Interior, the Secretary of Commerce, and Commissioner Aitchison of the Interstate Commerce Commission, or their representatives, to act as a Coal Distribution Committee under the temporary chairman-

ship of the Secretary of Commerce. A fifth member is to be added to the committee later who will undertake the administrative direction. The ultimate character of the organization, it was stated, must depend upon the situation.

Secretary Hoover sent the following telegram today to the Governors of the states on behalf of the Presidential Coal Distribution Committee, as the first step toward decentralizing the organization for equitable distribution, and maintenance of fair prices, of coal. Under this plan the distribution for railway use will be directed from Washington but, with the possible exception of a few interstate public utilities, the responsibility for all other distribution will rest upon organizations set up under state control.

In order that the federal government may do its part in the distribution of coal supplies over the present very difficult situation the President has appointed a committee on coal distribution comprising representatives of Departments of Justice, Interior, Interstate Commerce Commission and Department of Commerce under my chairmanship for the purpose of securing co-ordination of federal agencies in the best distribution of the available coal supplies. Certain priorities have been established in necessary commodities and fuel by the Interstate Commerce Commission, who have asked your state public utilities commission if Interstate Commission may have its active assistance in the distribution of coal to transportation and public utilities and governmental institutions if necessary. Beyond this the Presidential Committee on coal distribution are co-operating with coal operators and with the Interstate Commerce Commission in an endeavor to secure that coal shall be sold from the mines at a fair price. The agencies and present authority of the federal government of course do not enable it to protect the ultimate consumer of coal within the boundaries of a state further than such protection can be secured by the above means that coal sold in Interstate Commerce shall be sold to the original purchaser at a fair price and that fair distribution between states be obtained. The problem of securing that the ultimate consumer shall be protected upon coal now in circulation and on resale of coal distributed as above and that equitable distribution shall be carried out must rest within the authority of each state. I am sending this telegram at the request of the President to learn if you feel that you can undertake to create a state organization under your direction to secure that this shall be done and with which we can co-operate.

Electric Locomotives Rebuilt for English Railroad

THE METROPOLITAN RAILWAY in England has recently made alterations in track layout on its electrified section which make it possible to run a number of trains without a stop from Baker Street to Harrow-on-the-Hill, a distance of nine and one-half miles. The greater part of the electric train service includes many stops requiring locomotives with large starting effort and moderate running speeds. The new service requires also high speed and for this purpose 20 locomotives are being reconstructed. Six-car trains are used, weighing with passenger load about 180 tons and with the locomotive 240 tons. The locomotive has a 0-4-4-0 wheel arrangement and is equipped with four 300 hp. motors. According to American standards the train is light, but the power of the locomotive is proportionally large.

The cost of coal in England has made the power consumption by electric trains a matter of greater importance than it was at one time and careful tests have been made to ascertain the performance of the locomotives. Automatic acceleration is used as it increases efficiency of operation when train weights are fixed as they are in this case. The tests showed the power consumption to be under 55 watt-hours per ton-mile. Complications of design are avoided in the reconstructed locomotive as regenerative braking is not required and the total amount of power used is not extremely large, permitting the use of self-ventilated motors.

There are four series-wound, commutating-pole motors on each locomotive. Each is rated at 300 hp. at 600 volts on the one hour rating, the corresponding locomotive speed being 30 miles an hour. The maximum speed of the locomotive on

the non-stop runs is about 60 miles an hour. The motors are the largest it was possible to have with the standard rolling stock wheel which would at the same time conform to regulations for clearance between track level and the bottom of the motor and the gear case. The magnet frame is of the box type cast in one piece and provided with the usual arrangement of suspension bearings from the running axle and with a nose support at the other end. The running wheels are of the disc center type having brake blocks acting on both sides of the rim. The truck frames consist of plate frames stiffened with cast steel corner castings.

Vacuum brakes are used on the coaches while the locomotive is equipped with vacuum brakes and Westinghouse air brakes. These are interlocked with the controller so that unless one or the other of the two brake systems is operative, power can not be applied to the motors. The Westinghouse brake is used generally for switching in the yards and the vacuum brake for operating the train.

Direct current power is supplied to the locomotive at 600 volts on the third rail system and an insulated return rail is laid in the center of the track. The running rails are not used for the return and carry only signal circuits. There are



One of the Reconstructed Locomotives

four positive and two negative collecting shoes on the locomotives; the positive shoes are in duplicate, one set of two being placed on each side. The negative shoes are on the center line. Collecting shoes are also fitted to some of the coaches which are connected to a power bus line carried through the train to enable the train readily to pass over breaks in the collecting rails.

There is a driver's compartment in either end of the locomotive. The control apparatus, including contactors, resistances and auxiliary machinery is arranged in a group placed along the center line of the locomotive. This arrangement provides a runway on each side which facilitates inspection and the making of repairs.

PRINCIPAL DIMENSIONS	
Length over buffers	39 ft. 6 in.
Length over body	35 ft. 0 in.
Width over body	8 ft. 0 in.
Height from rail	12 ft. 4 1/4 in.
Centers of motor trucks	20 ft. 3 in.
Wheelbase of motor trucks	9 ft. 3 in.
Total wheelbase	29 ft. 6 in.
Diameter of running wheels	43 1/2 in.
Gear ratio	26/54
Capacity of motors	300 hp.
Total hp.	1,200

The mechanical work on the locomotive is being done at the Barrow Works of Messrs. Vickers while the electrical equipment is being supplied and erected by the Metropolitan Vickers Electrical Company, under the direction and supervision of Charles Jones, chief locomotive and electrical engineer, Metropolitan Railway Company.

Strengthening Chicago Track Elevation Subways

Floors of Structures Built in the Nineties Are Now Being Renewed for Heavier Loading

ABOUT TWO YEARS ago, the Illinois Central completed the replacement of its street subway structures for the first track elevation work done in Chicago in 1892. Evidence that some of the other structures of the early track elevation work in that city are gradually nearing their service life is seen in the replacement of the floor system of subways used by the Chicago, Rock Island & Pacific and the New York Central in their joint entrance to the La Salle Street station. The first stage of this work was completed last fall and it is anticipated that further progress will be made during the coming year. The present work is of interest

or approximately 26,000 rivets for the work done on 13 subways last year.

In order to further eliminate field riveting, the old shelf angle which was riveted to the web of the girders and to the old deck plates, was not provided for under the new arrangement. The new deck plates are entirely free or separate from the girder webs, small angles being riveted along the edges near the girders and the space between the web and this angle being filled with concrete for a water-shed.

Work Done Jointly

The line on which this work was done consists for the most part of four tracks, the right of way being on the center line between tracks so that each railroad owns two tracks. The two middle tracks are used as joint double tracks, the outside tracks being used as service or standing tracks. The work has been carried on jointly by the two roads; but instead of working independently with arrangements for cross piling, it was decided to carry on the work simultaneously with a crew for each road working on either side of the center line and arranging for an amicable sub-division of the work to be done on the center line girder as occasion demanded. This work was carried on under this arrangement without any misunderstanding or friction and the presence of the two crews assigned to exactly the same character of work served to foster a friendly rivalry which was instrumental in speeding up the progress. During the course of the work on a given structure a portion of the two middle tracks was isolated by introducing temporary cross overs to the outside track on either side. This left the tracks over the bridge free for the use of the construction forces and for occupancy by the erecting equipment. According to the usual arrangement the compressor

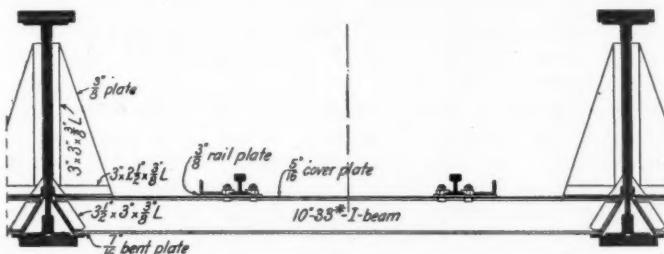


Fig. 1—The Original Construction

because it relates to a type of floor which was rather popular in the early subways, namely transverse steel I-beams covered with a steel plate, the rails being supported on a rail plate which was carried directly on the cover plate and secured by means of clips. The old floor in this case is being renewed with heavier construction of substantially the same type though with a number of improvements that decrease the cost of the work.

The old Rock Island-New York Central subways had floors consisting of 10-in. 33-lb. I-beams spaced 12-15/16 in. center to center and covered with a plate 15/16 in. thick, the general nature of the construction being shown in Fig. 1. However, after 20 years, through increases in the imposed loading and reduced strength of the steel on account of corrosion, it became necessary to relieve the floor beams by introducing cross ties supported on the beams by means of oak blocks under their ends. This had the effect of concentrating the live load on the beams closer to the ends and thereby reducing the live load bending moment. This, however, was designed purely as a temporary expedient and conditions finally required the renewal of the floor with heavier material.

The new floor beams are 12-in. 70-lb. Bethlehem girder beams carried on end connections substantially like those in the old structure and covered with a 3/8-in. plate. The track is supported on this floor after the manner of the original construction as modified, that is, with the use of cross ties and bearing blocks, every third tie being made long enough to engage a bracket on the girder so that the track can be secured to line without any connection being made through the deck plate.

The construction differs from the old in one important essential. There are no direct rivet connections between the deck plate and the flanges of the I-beam. The only rivets in these plates are those required for splices, for connections between plates, for curb angles along each side and for clip plates for holding the plates in position on the beams. This change in construction was effective in eliminating practically 1,000 rivets per track for each bridge.

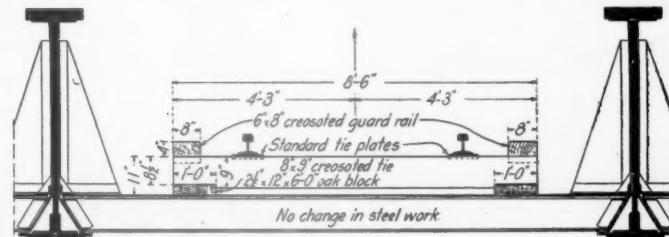


Fig. 2—Introduction of the Ties Reduced the Stresses in the Old Floor

car occupied the track at one end of the bridge and the derrick car that at the other end. The manner of carrying out the work at the individual bridge was as follows:

First the ties and rails were removed from the bridge. At this time the concrete along the sides of the girders and the ends was also removed and the brackets were burned with acetylene torches on the girders between the main line and side tracks, this being necessary so that the old rivets could be cut and new ones driven.

On many of these bridges considerable dirt had collected and packed down and hardened, and all this had to be removed before access could be had to the deck plates so as to cut the rivets. This work usually required about half a day's time.

The next step was cutting the rivets. When this work was started at Twenty-fourth street, the rivets had to be cut

by hand, which was a slow process, requiring 13 days. Later a Duntley-King pneumatic rivet buster, was used by which it was possible to reduce the time required for a bridge to five days. The first step in rivet cutting was on the brackets and angle irons running the entire length of the structure, then cutting the rivets in the hangers for the floor beams, and next cutting the rivets in the deck plates. To subdivide the work on the center girder, the New York Central forces cut the old rivets and the Rock Island forces drove the new rivets. This was considered an equal division of the work, with the exception of the Thirty-ninth street subway, where this method of procedure was reversed with respect to the center girder.

The deck plates were loosened and pried off and swung around in a parallel position, making them convenient for

and repainted on the face where the beam had been removed before the new beam was put in place. The new beams all being in place, the new top deck plates were installed and the riveting was then started on the floor beams. Riveting the deck plates was the next step and riveting the brackets last. During the period of riveting part of the crew was loading up the old beams and plates in gondola cars for shipment.

Whenever a girder was found out of level it was jacked up and shimmed to a fairly good level by placing oak board shims underneath the bearings. This was done in all cases where practicable. The rivets in the floor beams were all tested by inspectors from both the Rock Island and the New York Central, those for the center girder were inspected by both inspectors.

After the steel erecting crew had completed its work by replacing the new beams and deck plates, painters did the necessary painting, then the carpenter forces replaced the ties and the section forces replaced the rails. The division forces put on the necessary concrete work along the girders, and, where necessary, removed the old cracked and shattered bridge seats under the west girders and replaced them with new concrete bridge seats.

As the floors of these bridges are level, it was not thought necessary to waterproof the tops of the deck plates, as it would not be possible to obtain a good job of waterproofing with the ties resting directly upon the plates, as they do. However, as so many rivets connecting the deck plates to the beam flanges have been eliminated, thus doing away with the possibility of many loose rivets developing, it was thought that due to this change the steel itself would be tight enough to hold the water until it had either evaporated or run off over the backwalls of abutments.

This work was done under the direction of I. L. Simmonds and B. R. Leffler, bridge engineers respectively of the Chicago, Rock Island & Pacific and the New York Central, Western Lines. The *Railway Age* is indebted for the above information to S. T. Corey, assistant bridge engineer of the Chicago, Rock Island & Pacific, Chicago.

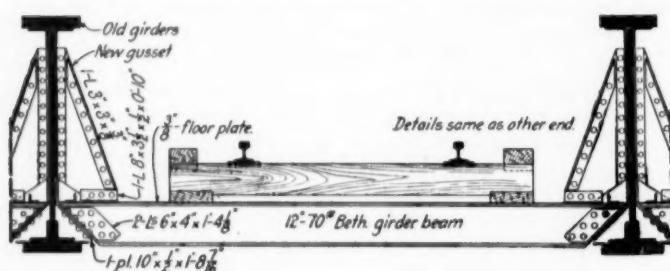


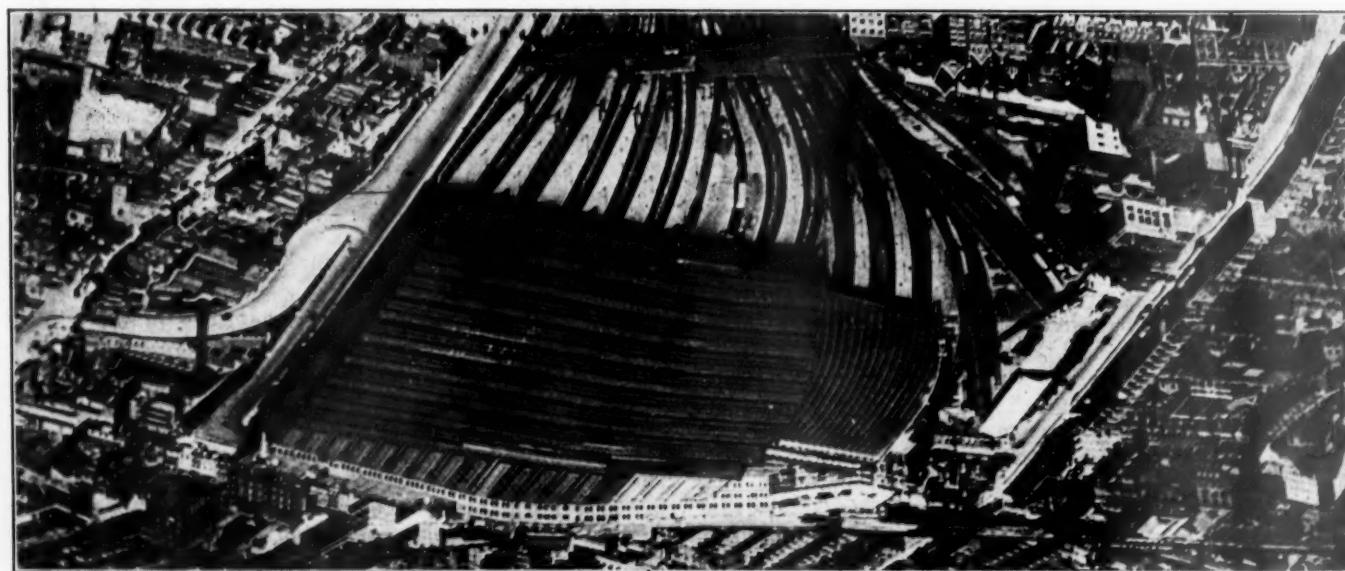
Fig. 3—The Present Floor with New Steel Beams

handling with the derrick. The derrick was then used to lift these plates and carry them from the bridge out of the way.

This being finished, the beams were next removed, using the derrick also for this purpose. Two beams could be removed at once and carried back out of place, and then a new beam brought up and installed. This method was followed until all of the beams were removed and the new ones installed. In doing this the rivets on the girder between the main line and the side track were driven out of place as the old beam was removed, and as the new one was installed it was held in place by a drift pin or a bolt, in some cases, until necessary to go on with the riveting.

When the old beams were removed the bottom flange of the girder was thoroughly cleaned of all rust and dirt

FIVE HUNDRED TONS of British Columbia potatoes recently went to Cuba. The potatoes were all grown in the neighborhood of Vancouver City.



P. & O. Photo

Waterloo Station, London, from the Air

Administration Continues to Back Up Labor Board

No Settlement to Be Considered That Is Not Founded on Recognition of Its Authority

HERE WERE some indications Thursday morning that efforts to settle the strike were coming to a head. T. DeWitt Cuyler, chairman of the Association of Railway Executives, went over the entire situation with the President after which Mr. Jewell and heads of the organizations on strike conferred with the President. Mr. Cuyler remained in Washington to await further developments and other railway executives were to see President Harding.



From the Indianapolis News

Among the Interested Parties

That the first essential looking to a settlement of the railroad strike is that the strike be first called off is apparently the position now taken by President Harding after a series of conferences during the past week* at which he has gone over the entire situation. In a telegram made public on Wednesday, addressed to J. Cleve Dean, chairman of the "Railway Employees' Publicity Association," Chattanooga, Tenn., in reply to a protest against the attitude of the President, he extended an invitation to urge the striking railway men to accept the decision of the Railroad Labor Board and return to work under its decision, pending a re-hearing on any question concerning which there is reasonable doubt as to the correctness or justice of the decision made. The President said in his telegram, dated July 25:

Since you speak as chairman of the Railway Employees' Publicity Association, and since it is exceedingly important that the American people know precisely the question at issue in the present railway and coal strikes, I am more than glad to answer your telegram, though I can only treat your politically partisan references with that contempt which is felt by every good citizen in the hour of deep public concern. Happily for the American public everything done and everything said by government authority relating to the two strikes is a matter of record, and can not in any way be distorted. There is no dispute about the American citizenship of the men on strike, nor will anyone question that

many of them gave everything that men can give for the service of this country in the World War. Nor is it disputed that the men on strike are exercising their constitutional and lawful rights, under existing statutes, in declining to work under the terms decided by the Railroad Labor Board or tendered to the workmen by the mine-operators of the country. No one has attempted or proposed to draft free men into either the railway or mining service, or suggested coercion under military force. The military forces of free America are never used for such a purpose. Their service is only that of preventing lawlessness and violence.

That same unchallenged freedom which permits you and your associates to decline to work is no less the heritage of the free American who chooses to accept employment under the terms proposed. The difference between the two positions is that the striking railroad workers exercise their rights of freedom in seeking to hinder the necessary transportation of the country; notwithstanding the provision made by law for the consideration of any just grievance; and the striking miners seek to prevent the production of coal necessary to common welfare, notwithstanding the offer of an agency to make an impartial settlement; while the men who choose to work in response to the call of the country are exercising their like rights, and at the same time are making their contribution to our common American welfare. The decisions of the Railroad Labor Board are in compliance with a mandate of the law-making body of the United States. Without discussing the decisions at issue, it is fair to assume that a government agency is ever ready to correct an error which is made, else government itself would become unjust. Moreover, it is indisputable that there can be no government unless its mandates are accepted by the citizenship of the Republic.

This observation relates more particularly to the railroad situation. When the mining situation became menacing I invited representatives of the mine-workers and the operators to a conference.



Photo by Keystone

New Employees at Work on Lackawanna Locomotive, Hoboken, N. J.

They came together, they were advised as to the call of common welfare, yet in eight days of opportunity no progress was made. In the absence of any tribunal authorized to settle disputes between mine-workers and their employers the federal government then voluntarily proposed the creation of a national commission before which the disputes might be settled justly, in the light of full information and in accordance with the best expressions of our modern civilization. Instead of contemplating the resort to force, it anticipated the very opposite—industrial peace with justice to every man concerned. Instead of aiming at involuntary servitude, to which you inexcusably refer, the government asked the mine-workers to resume their activities, in response to a manifest public need, at precisely the same wages and under precisely the same working conditions as those under which they had been working

contentedly for the last two years. Those who spoke for the mine-workers refused such a proposal. There is no dispute of the right to refuse. Since they declined to respond, and since it is believed there are enough men who love this country and cherish its security, and believe in serving the common welfare, to come to the relief of the mining situation, and avoid suffering, privation and paralysis, I asked the governors of the coal-mining states to invite mine-operators and mine-workers to resume their activities, and to promise that to which every man is entitled, namely, protection in his lawful pursuits. This protection applies alike to the men on strike who observe the law and make no lawless interference with men at work, and to the men who are lawfully at work and entitled to protection by every agency of government in that work. If you mean to challenge the rightousness of free men to be protected in their lawful pursuits against interference and violence, I will be glad to join you in submitting that question to the decision of the American people.

It will interest you to know that instead of the government's action being an expression of the preference of the capitalistic class, it has been quite as much opposed by those who speak for employers as it is by you and your associates. Government undertakes to represent neither class alone, and is opposed to all conflict among classes, and disputes the right of any group or class, organized or unorganized, to imperil American welfare. Government speaks only for the American people as a whole and the common good of all its citizenship.

In view of all that the government has done or attempted to do during the past year and a half to relieve the American farmer from the burdens of readjustment and to relieve labor from the hardships of unemployment, I know your attempted appeal to American prejudice will fall upon deaf ears. It is ungrateful and it is untruthful. If you are the believer in peace and harmony and the reign of justice which you would have believed, I invite you now to pass judgment on the failure of the mine-workers to accept the awards of an able and impartial commission in determining the merits of the dispute between coal-miners and coal-operators, and I invite you to urge the striking railway workmen to accept the decision of the American Railroad Labor Board, acting under authority of the law, which must be supreme, and return to work under that decision, until you and I, and everyone else interested in American welfare, may join in asking the Railroad Labor Board to give a rehearing on any question concerning which there is reasonable doubt about the correctness or the justice of the decision made. These are the ways of peace, these are the requirements of enlightened civilization, these are the things expected by your government of its loyal and law-abiding citizenship.

The telegram from Mr. Dean to which the President replied was as follows:

I wish to point out to you that the railway employees and miners who are on strike are loyal American citizens and are only executing their constitutional rights. A large percentage of them fought on European soil that there might be no more war, and for you or any governor to attempt to operate the mines or railroads by military forces or to attempt to draft men into mining or railroad service would be an attempt to establish involuntary servitude. And I dare to predict when "involuntary servitude" is attempted by you, then the long predicted war between labor and capital will loom up. The American farmer and laborer have come to realize the hostile attitude of the G. O. P. toward them, and they realize that the hard times that now exist is a premeditated plan to bring the farmer and labor down to their knees. The blood of the American farmer and labor is at a boiling heat because they came to the firm conclusion that their government, or your administration at least, is against them. I pray that it will not come, yet I feel at liberty to predict that in your attempt to place the American labor under the gun nothing short of a revolution will happen. I am a lover of peace and harmony, yet I am for these striking railway employees and miners and I know that they will put forth every possible means to keep peace in our country. But these are days which "try the very souls of men," and I am hoping that you will be wise enough to see the dark clouds that are in the horizon sky and will change your attitude so as to remove those clouds.

It was stated that the government is not unmindful of the seriousness of the situation, the country being threatened with a coal famine this winter and diminished industrial production before that time, while there is "more or less of a threat of a paralysis of transportation," and that the government is seeking to work out the problem and at the same time "maintain the dignity and majesty of the government." The President had said on July 20 in a telegram to Governor Sproul of Pennsylvania that the selection of a commission similar to that proposed in the President's arbitration plan,

not only to settle the coal wage controversy but to conduct a broad inquiry into the fundamental economic condition of the coal industry, may be expected in due time but that it may be desirable to modify the form of the commission as originally proposed. It was stated again on Tuesday that this commission would be appointed but not this week and it is thought that the President may be awaiting an opportunity for legislation authorizing its appointment. A bill providing for a commission was introduced in the Senate by Senator Borah on Tuesday.

President Takes Personal Charge

President Harding on July 20 took personal charge of the efforts to ascertain whether a basis exists for the settlement of the railroad strike, after word had been received from Chicago that the endeavors of Chairman Hooper of the Labor Board had failed to reconcile the "antipodal views" of the railroad executives and Mr. Jewell and his associates. Up to that time the President had been devoting more of his attention to the coal situation and leaving the railroad strike to be dealt with by the Labor Board but the failure to settle the coal strike served to emphasize the effect which the slowing up of rail transportation is having in some districts. At this writing the efforts of the President apparently have been confined to obtaining complete information regarding the situation from all angles. There has been no announcement that would indicate that he has found any method of procedure that can have any present effect. For some time administration officials appeared optimistic over the prospects of an early settlement after they had been told that Mr. Jewell was no longer insisting upon the rescinding of the wage decision that was the cause of the strike, but that, providing the board would allow a rehearing on the wages and working rules, a settlement could be speedily agreed upon if the railroads would waive the seniority issue and discharge their new employees to take back the strikers. They apparently failed to appreciate the importance of this question until they had been informed of the extent to which many roads, particularly those in the east, had replaced the strikers with new men to whom they had promised permanent positions and the places in the seniority list that had been forfeited by the strikers.

The President delegated three Republican members of the Senate Committee on Interstate Commerce to meet with a committee of railroad executives; Secretary of Labor Davis, while on a visit to his home at Mooseheart, Ill., conferred with Mr. Jewell and the President himself summoned Chairman Hooper to Washington for an extended conference at which the entire situation was gone over in the light of the information reported by the senators and Mr. Davis. It is understood that the senators were called upon to act as intermediaries with the idea that possibly a solution might be found in some form of emergency legislation, but it was early agreed that nothing of this kind could be made effective for the present and the discussion of legislation was mainly confined to changes in the Transportation Act designed to strengthen its provisions in such a way as to prevent a recurrence of the situation that has arisen.

Railway Executives Called to Washington

A telegram asking for a conference with the railroad executives for the purpose of ascertaining their exact position and the possibility of their making concessions was sent to a meeting of the eastern presidents at New York on Thursday, July 20, and in response a committee consisting of Thomas De Witt Cuyler, chairman of the Association of Railway Executives; W. H. Truesdale, president of the Delaware, Lackawanna & Western; L. F. Loree, president of the Delaware & Hudson; A. H. Smith, president of the New York Central, and W. W. Atterbury, vice-president of the Pennsylvania, came to Washington Thursday evening and held

a three-hour conference with Senators Cummins, Kellogg and Watson. The senators then reported to President Harding the next morning.

It was announced that they had discussed the possibility of legislation and had reached the conclusion that there was no immediate legislative solution for the present situation, although the possibility of future legislation had been considered, and that the senators had sought full information for the President regarding the points at issue which were in the way of a settlement. Senator Cummins said that there was "no immediate hope" and Senator Watson said that the committee of executives did not have full authority and that there would probably be other conferences. He said both the senators and the executives understood and that Mr. Hooper had indicated, that the question of seniority is the only real issue involved but that there was some doubt as to whether the question of adjustment boards is involved. It was apparent that the railroad men had offered no hope that they would recede from their insistence on standing by the new men they had taken on.

The senators communicated President Harding's conviction that with a big part of the year's coal production already lost, a heavy movement of fuel during the rest of the year necessary and large crops coming along, it is imperative that some settlement be reached, if possible, without waiting for the carriers and the unions to fight it out. The executives, on the other hand, pointed out the necessity of establishing the authority of the board and that this cannot be done if concessions are to be made to men who have struck against its decisions. They also pointed out that some of the eastern roads have filled half of the jobs made vacant by the strikers, giving the new men assurances of permanent employment, and therefore have the strike practically won, and that if they were to displace these men for the benefit of those who left their service they would not only be paving the way for future strikes but would make it much more difficult to replace strikers on another occasion.

Chairman Hooper Consults with President

After the senators had reported it was announced that Chairman Hooper had been summoned to Washington so that the President might inform himself more closely than he had been able to at long range. Mr. Hooper arrived on Saturday morning and spent five or six hours with the President, giving him a complete history of the situation up to date, including his various conferences with the strike leaders and the railway executives. During a part of the time Senators Cummins, Kellogg and Watson were also present and also Secretary Weeks of the War Department. Mr. Hooper left Washington late in the day to return to Chicago without making any public statement and there was no announcement from the White House. Senators Underwood and Pomerene, Democratic members of the Senate interstate commerce committee, also conferred with the President later. President Willard of the Baltimore & Ohio had been at the Capitol earlier in the day talking with senators regarding the situation and apparently inspired some confidence in the ability of some roads to effect individual settlements as he had arranged for conferences with the former employees of his road for Tuesday.

Secretary Davis reported to the President by long distance telephone regarding his conference with Mr. Jewell on Saturday and on Monday he reported personally. He expressed the opinion that the strike could be settled at once if the railroads would restore seniority rights to the strikers. J. C. Davis, director general of railroads, was also consulted by the President.

On Wednesday W. W. Atterbury of the Pennsylvania conferred with the President for an hour or so and it was learned that Chairman Cuyler of the Association of Railways Executives was to see the President on Thursday. Mr.

Atterbury on leaving the White House gave out a statement that the Pennsylvania was willing to leave the question of seniority to its "employees," who are now those who did not strike or who returned after going out and new employees who have taken the places of the strikers, and who therefore would hardly be expected to vote to displace themselves in favor of the strikers. Mr. Atterbury said: "The President, realizing the importance of the seniority question as the crux of the present railroad situation, desired to discuss its various angles in a definite settlement of the railroad problem. I expressed to him the opinion that, so far as the Pennsylvania system was concerned, such a question should properly be determined by our employees and that the Pennsylvania system would be entirely guided by any determination that our employees thought wise, fair and equitable."

Jewell in Washington

B. M. Jewell and the heads of the unions on strike came to Washington on Thursday morning to see the President. It was stated at the White House that, while they had not been invited, the President would see them. Several railway executives were also expected.

Conferences at the Capitol

Attorney General Daugherty also conferred at the Capitol on Saturday with Senator Cummins, chairman of the committee on interstate commerce, and Senator Borah, chairman of the committee on education and labor. Senator Borah and



Halladay in the Providence Journal

Out of the Way!

Senators Walsh and King of his committee had previously held a meeting with President Gompers and Secretary Morrison of the American Federation of Labor and Edgar Wallace, legislative agent of the United Mine Workers. "I think we agree," the attorney general said, "that the government has all the law needed in case of emergency. If the government has the right to protect interstate commerce it has the right to protect the men in an industry essential to the maintenance of interstate commerce. We discussed the Transportation Act and additional legislation which might be thought necessary. We have a plan for anything which might happen." He also said that the Department of Justice was

watching the strikes with a view to determining whether there existed a conspiracy among the leaders to interfere with interstate commerce but that no evidence along this line had yet been discovered.

The legislative agents of the four train service brotherhoods at a long conference with Senator Cummins on Saturday presented a written argument urging the repeal of the labor provisions of the Transportation Act and the restoration of the plan of mediation and arbitration provided by the Newlands act. The latter has not been repealed but the United States Board of Mediation and Conciliation has been allowed to go out of existence by failure to make any appropriation for it. They also told the senator that they were receiving numerous reports of locomotives and cars in unsafe condition and that the trainmen might refuse to take out trains for this reason. Senator Cummins indicated that he might be willing to have the Transportation Act amended so as to provide more specifically for a "living wage," including a definition of a living wage, and also to make the orders of the Labor Board enforceable. He said the law now, at least by implication, contemplates a living wage and that he had no doubt the board had taken it into consideration in its decision.

Menace to Mail Service Past

Postmaster General Work announced on July 20 that any menace endangering the delivery of mails arising out of the strike of railway shopmen had passed. Except in isolated instances where local trains have been annulled and motor truck transportation has been substituted, he said, no emergencies have arisen recently and few are expected in the future. Since the outbreak of the strike the Postmaster General has received innumerable offers from private sources volunteering automobiles, trucks and aeroplanes.

"We will have no train service between Deleon and Cross Plains (Texas) until we get protection for men who will work at Deleon," was stated in a message received on July 20 by the Post Office Department from General Manager Whitenton of the Missouri, Kansas & Texas. "Also there will be no service between Stamford and Rotan," he continued. "The United States marshal is not furnishing deputies to protect our workmen at Deleon and as a result men will not go there to work. Service generally is going to depreciate unless the question of protection is settled and men given an opportunity to work who are so inclined."

The Post Office Department arranged for truck service between Deleon and Cross Plains, and the statement of Whitenton was placed with the Department of Justice for action.

Superintendent of Railway Mail Service W. G. Van Dervoort, Seattle, announced that the following Northern Pacific trains were discontinued: Trains 422 and 423 between Seattle and Moclips, Wash.; trains 593 and 594 between Centralia and South Bend, Wash.; two trains between Bellingham and Seattle; two trains between Kanskaskat and Tacoma; two trains between Lewistown and Spokane; two trains between Dayton and Pasco; two trains between North Bend and Seattle; two trains between Missoula and Wallace, Mont.

Superintendent of Railway Mail Service A. A. Fisher, Washington division, reported that the Norfolk Southern had reduced train service between Belhaven and Mackeys, N. C., from six times a week to three times a week.

Superintendent of Railway Mail Service S. A. Cisler, St. Louis, stated that but 20 United States marshals were on duty at Hannibal, Mo., where the shops of the Missouri, Kansas & Texas are located, and that some minor conflicts had occurred between the marshals and the strikers at that point. Cisler stated that there was no immediate prospect of opening the shops, or resuming train service on the M. K. & T. between Hannibal and Moberly. The Wabash was

still running trains through Hannibal by continuing the run of engine crews to Springfield, Ill., and Kansas City, Mo. The superintendent said that the Wabash had only 20 days' supply of coal, but he knew of no shortage on other roads.

A. F. of L. Urges Joint Conferences

Invitation to the federal government to "take the one step which labor believes effective" in settlement of both coal and railroad strikes was extended by President Samuel Gompers of the American Federation of Labor on July 21.

"We invite the federal government," he said, "to see to it that employers and workers come together. The government has done everything except this one logical, necessary thing. The government has threatened a great deal. It has talked about troops and about the rights of the public. It has not talked effectively about conference and it has had little or nothing to say about the rights of the workers. Labor calls upon the government to talk about conference between employers and workers, both in the coal industry and in the railroad shop strike.

"The President has talked about the similarity of his action and the action of President Roosevelt in the anthracite strike. There is no parallel. The Colonel told the operators to get into conference with the union and he fixed a time limit for that conference to begin. President Harding has not told the mine owners to get into conference.

"Conference is the thing that is needed. Let there be less talking about force and coercion. It is un-American and it will have no good effect. American workers are the most efficient workers in the world, but they will not work under duress. They will not enter into involuntary servitude in violation of the constitution.

"Labor asks for conference with the employers. If the government wishes results, if it wishes operation of mines and railroads let it adopt the only course that can secure those results. Let it exert its tremendous influence to bring the employers into conference with the representatives of the workers.

"If the government cares more about sustaining the reputation of its helpless and all but defunct Railroad Labor Board, if it cares more about a costly and ineffective military show than it does about justice and results, then it is on the right track.

"But labor urges the government to come back to a constructive and sane viewpoint. Labor invites the government of the United States to bring about conference between workers and employers. Labor will enter conferences in every case in absolute good faith and unless employers are absolute Bourbons and autocrats the strikes can quickly be adjusted and production and transportation put into effective operation."

Telegrams of support, sympathy and co-operation were sent on July 22 to President Bert M. Jewell of the A. F. of L. Railway Employees' Department and to President John L. Lewis of the United Mine Workers by the joint legislative conference, composed of the legislative representatives of the American Federation of Labor and of all national and international unions in Washington. The conference is composed of more than 50 representatives of labor organizations.

That the railroad shopmen have been preparing for this strike since April, 1921, and waited 15 months because of a desire to "accumulate enough grievances" was asserted by P. J. Conlon, vice-president of the International Union of Machinists, in a speech to a meeting of strikers in Washington on Sunday. At that time it was learned, he said, that the national agreements were to be abolished. "It generally takes from 30 to 60 days to make a shop strike effective," he said, "but before this one had been on ten days more than 250 trains had been cancelled, the West Virginia non-union mines had been bottled up, and the iron and steel industries were crying for help. And we have hardly started yet."

Labor Board Works to Prevent Spread of Strike

FOLLOWING the Labor Board's announcement, quoted in last week's *Railway Age*, to the effect that it had found irreconcilable differences between the railroads and the shopmen on strike and that, therefore, its efforts at settlement of the controversy had ended, Washington became the center of interest because of the expressed desire of the present administration to end, if possible, the twin coal and rail strikes. The Labor Board's activities since July 20, when Chairman Ben W. Hooper announced the end of its efforts to bring the railroads and the striking shopmen together, have been confined largely to conferences with government officers including President Harding and Secretary of Labor James J. Davis and to efforts to prevent the spread of the strike to other classes of employees on several of the large carriers.

On July 21 Chairman Hooper was summoned to Washington by President Harding for a conference on the strike situation. Following this meeting, Chairman Hooper said:

"I have gone over the whole situation very thoroughly with the President, undertaking to give him the history of the controversy in every phase down to the present time. I do not feel at liberty to discuss details of the things talked about."

At the same time W. L. McMenimen, member of the labor group on the board; B. M. Jewell, head of the Federated Shop Crafts; the leaders of the seven shopmen's organizations involved in the strike; Arthur S. Nelson, Department of Labor Commissioner of Conciliation, and Timothy Healy, head of the firemen and oilers' union, were summoned to Mooseheart, Ill., by Secretary of Labor Davis for conference on the strike situation. Following this meeting, Secretary Davis announced that he believed "the strike could be settled if the roads would give the striking shopmen their seniority rights and there was a re-hearing by the Labor Board on other disputed questions." Secretary Davis said he believed the matter of establishing national adjustment boards "could be adjusted" and asserted that in his opinion the contract question "does not stand in the way of an agreement." He also admitted that every angle of the situation had been discussed with Mr. Jewell and the other labor leaders and that the general complaint was that the carriers did not accept the decisions of the Labor Board, while the employees in nearly every instance have abided by these decisions. He later talked with President Harding, submitting a report of the information he had gathered.

Jewell Cites Adjustment Board

Controversy as Real Issue in Strike

Prior to these conferences, Mr. Jewell issued a statement in answer to the railroad's contention on seniority, accusing the latter of camouflaging their real objection to the union's stated terms of peace. The railroads' position that they cannot restore the seniority rights of the strikers if they should return to work is not "sincere," according to Mr. Jewell.

"The real stumbling block is our demand for a central board of adjustment as outlined in the Transportation Act," he declared. "The railroads know they cannot justify their fight against the national adjustment board before the public. The board would take working rule disputes off the hands of the Labor Board, except in cases of appeal, and leave the board free to devote practically all its time to wage questions."

In support of his demand for a national adjustment board, Mr. Jewell enumerated the following arguments:

"(1) Conditions of shop work are practically the same in all sections of the country and the character of the work is the same. Car and locomotive repairs are the same and must be made in about the same manner everywhere.

"(2) Uniform national rules have been promulgated by the Labor Board.

"(3) If these rules are interpreted and applied differently by different adjustment boards, a mass of conflicting cases eventually would be presented to the Labor Board.

"(4) Since uniform interpretation and application is desirable and will be the result of final decisions by the Labor Board, it is inefficient to establish several intermediate boards who will create inharmonious rulings which the Board must harmonize.

"(5) Regional boards would impose unfair expense and duplication of efforts upon labor organizations, requiring a representative of the six crafts on each adjustment board, thus requiring payment of expenses amounting annually to a large sum.

"(6) Since a national labor board has been established, thus insuring a national code of rules and working conditions, an intermediary court should be organized on the same basis logically and efficiently."

In commenting on the adjustment board issue, William H. Finley, president of the Chicago & North Western, said:

"The strike was declared against a decision of the Labor Board involving only wages and working rules in which no mention whatever, directly or indirectly, was made of a board of adjustment, national, regional or otherwise. The creation of such a board was never mentioned officially in the hearing of the shopmen's case and is in every way foreign to the issues now involved.

"The railroads are accused of opposing the formation of a national board of adjustment. How can the railroads oppose a matter to which they have never been asked to agree?

"Regional boards of adjustment have been formed by the railroads and employees in the train service, but the question of forming such boards or a national board of adjustment in connection with the shopmen has never been put up to the railroads.

"There is no connection whatever between the present strike and a national board of adjustment and by no stretch of the imagination can such a connection be construed. It is merely an attempt on the part of persons without a just cause to introduce purely irrelevant matter."

Maintenance of Way Men Approve Leader's Action

The spread of the strike of maintenance of way employees was finally ended when the grand lodge officers of the Brotherhood of Maintenance of Way Employees and Railway Shop Laborers voted their support of the course taken by E. F. Grable, president of that organization, in withholding a strike order. The fear that the general chairmen would censure Mr. Grable for having accepted compromises and that an "outlaw" strike might follow, failed to develop. The various district leaders reported concessions or progress obtained in local conferences with various railroads. Following the meeting, however, Mr. Grable announced that any road which refuses to confer with the unions' representative would immediately face a walkout of its maintenance of way employees.

Some interesting sidelights on the administration's attitude towards the strike and its settlement were given by Mr. Grable, who, after conferences with members of the Labor Board, said:

"I have received advice that Senator Cummins, chairman of the Interstate Commerce Committee of the Senate, is going to hold hearings immediately on disputed points in the labor provisions of the transportation act, principally to ascertain how the law may be amended so that the living wage principle would be made clear so that every employee would be granted a living wage.

"I advised the board of instructions I issued and sent to each of the general chairmen throughout the United States to immediately open negotiations with their respective roads on rules, working conditions and wages and if they cannot be satisfactorily adjusted, to submit these disputed matters to the board. The first of these new disputes has been received by the board coming from the Chicago, Milwaukee & St. Paul. The officials on that road set aside the 30-day clause in the existing agreement in order to meet with our representatives to negotiate the matters in dispute and forward the unadjusted matters to the board.

"This is the first of many disputed submissions on these subjects which the board will receive very shortly and I respectfully requested the board to give me their assurance that these cases will be set for a hearing at an early date and I have received assurance of the board that this will be done. I have also requested the board that any further decision on these new disputes, more favorable to the men, be retroactive to July 1."

Numerous Conferences Held

Numerous conferences between members of the Labor Board, particularly Mr. McMenimen and Chairman Hooper and the leaders of the national and system organizations of employees who have been threatening to walk out, have been held during the past week, representing the continuing effort of the Board to prevent a spread of the present strike. The result of these conferences have been for the most part to hold the employees involved in line and the efforts of the Board in that direction have been successful. Largely through work of this nature, strikes of station employees, signalmen, clerical and maintenance of way forces on several large carriers have been averted. For instance, the clerical forces on the Chicago & North Western, who have been threatening to strike for some time, have settled their dispute largely through the efforts of Mr. McMenimen. Many other similar disputes of system extent have likewise been settled during the past week by agreement with the carriers involved. At the present time, therefore, there seems to be little likelihood of a spread of the strike, although conferences

are continuing, looking to the avoidance of such a contingency.

Approximately 300 general chairmen of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, express and Station Employees met in Chicago on July 26 to discuss the strike situation and formulate their plans for the future. Headed by E. H. Fitzgerald, president of the organization, a delegation met with certain members of the Labor Board behind closed doors, discussing, it is reported, the grievances of these employees concerning the Board's recent wage decision and certain working conditions. The clerks' general chairman subsequently adopted a resolution warning that they would resort to their "economic power" if grievances are not adjusted. However, at the same time they took action which will end the recurrent rumors of a general walk-out of clerical forces.

That new organizations of shopmen are being formed on various Eastern and Western carriers is indicated in telegrams and letters, which are being received at the Labor Board from newly created organizations asking that body for recognition under the Transportation Act.

Situation in East Improves Rapidly

EXCEPT AS concerns the developments at Washington, interest in the railway shopmen's strike in the east has been divided during the past week between the discussion relative to seniority and the outcome of the Baltimore & Ohio's conferences which began on Tuesday with the representatives of the shop crafts relative to a separate settlement.

The railroads in the eastern district apparently have the strike situation well in hand insofar as concerns operation. Latest reports are to the effect that forces have been recruited to between 50 and 60 per cent of normal and the situation is characterized by its continuing improvement. Passenger and fast freight schedules are generally being operated on time. Such delays as have occurred have been given publicity by the shop crafts organizations, but for the most part the delays have been only those such as would occur under more normal conditions. Reports are also to the effect that slow freight is being handled currently with certain exceptions. One of these is the Baltimore & Ohio, which, however, during the past week, reports considerable improvement over the preceding week. The Chesapeake & Ohio and the Norfolk & Western with a combination of a clerks' strike and a shopmen's strike have been handicapped to the extent that on the latter, for instance, the coal movement is running at present between 50 and 60 per cent of the unusually heavy movement in June. Coal loadings in the Pocahontas district for the week ending July 15—the latest figure reported—were only 22,174 cars, as compared with about 31,000 cars a week in June.

The Question of Seniority

The question of seniority is at present the outstanding feature in the strike in the eastern district as it is in the western district and in Washington. The subject is a leading one for discussion at the meeting of the Eastern Presidents' Committee, of which L. F. Loree, president of the Delaware & Hudson, is chairman. The position of the committee is given in the following statement which appeared over the signatures of the various railroads in newspapers in important centers, beginning Wednesday morning:

"Seniority"

What is this question of "Seniority" that is being discussed in connection with the railroad strike?

All employees on railroads are accorded seniority of service, if otherwise competent. This means that the senior employees are entitled to choice of work, and when it becomes necessary temporarily to reduce forces that the junior men are released and the senior employees retained.

A strike was ordered by union officers who have no connection with any railroad. Many employees, in compliance with the order, quit their

jobs and left the railroad service, and many did not leave but remained loyally at work, accepting the Government Labor Board decision.

There are thousands of such men who must, under the rules of fair dealings as well as the rules of seniority, be protected and supported. To discharge these men would be ingratitude of the grossest sort.

In addition to those thousands who remained in service, other thousands who wanted to work have been employed in good faith. The new employees in a great many cases left other employment with the understanding that if competent, they would be retained in their present position.

These men—those who remained and those who enlisted—have kept the trains in operation and the needs and the comfort of the people supplied.

It is submitted that to ask the railroads now to set aside these loyal men and replace them with the men who left, is to ask the railroads as well as the Government, which is concerned through the action of the U. S. Railroad Labor Board, to be disloyal to these thousands of loyal men.

Optimistic Attitude

The attitude of the railroad managements towards the strike situation is rather apparently characterized by its increasing optimism. The executives apparently feel that the railroads have approached or will soon reach the point where they can say that the roads have won the strike. They draw attention particularly to the fact that the roads have succeeded in recruiting their forces to a satisfactory degree and they emphasize the fact that interruptions and delays of traffic have been kept at a minimum. The opinion is expressed in many quarters, however, that there is one unsatisfactory feature in the situation. It seems to be the idea that the strike would be settled more promptly if the railroads could be left to work out the matter themselves. It is realized that it was the duty of the Labor Board and of the administration to take whatever steps they could to settle the strike. It is, on the other hand, felt that each announcement of further steps to be taken by the Labor Board or the administration is looked upon with hope by the strikers with the result that the latter decide to wait for developments. It is, therefore, felt that if the government authorities would adopt a hands-off attitude the men would see that they have nothing further to gain by waiting and would return to work in increasing numbers.

Baltimore & Ohio Holds Conferences

Another interesting factor which has received comment is the attitude of the American Federation of Labor notably with respect to its statements in favor of the strikers which have been issued by President Gompers. The fact that the A. F. of L. has found it advisable to take a part in the strike in this fashion is regarded in many quarters as a sign that the strike is not going as well as the shop crafts organizations would desire and as a response to a call for much needed support and assistance.

Representatives of the striking shop crafts organizations

met in conference with C. W. Galloway, vice-president, in charge of operation of the Baltimore & Ohio, in Baltimore on Tuesday. The conference was held at the invitation of the management. The representatives of the Baltimore & Ohio System Federation received permission from the Railroad Employees' Department of the A. F. of L. in a telegram which read: "Conference will be permitted, but no action is authorized." It was understood that no matter what agreement is reached during the conference it will have to be referred to the employees' department for ratification.

The Tuesday meeting began at 2 o'clock and adjourned at 6:30 until Wednesday morning. The following statement was issued by the Baltimore & Ohio Tuesday evening: "The meeting was devoted to a general discussion of the wage reduction and the various rules and working conditions as handed down by the Labor Board. No conclusions were reached. . . . The discussion was harmonious."

The conference was still in session on Thursday.

Prior to the meeting Vice-President Galloway declared that he went into the meeting with an open mind in regard to seniority rights. President Daniel Willard in a statement issued prior to the conference said:

There are no matters in controversy between the Baltimore & Ohio Company and its employees that cannot in my opinion be settled and settled promptly by a conference called for that purpose. The Baltimore & Ohio Company would much prefer to keep in its employ the men who have been in its service, many of them for years, and who are familiar with its working conditions and requirements, and I am confident that if a conference could be had between representatives of the men and the officers of

tion addressed to the striking shopmen on the Southern Railway by President Fairfax Harrison. The letter said in part:

"I have the greatest sympathy with our men in their respect for their fraternal obligation. Some of those now on strike, in obedience to a call from without our ranks, are my old and tried friends. My effort during a difficult ten days has been to keep the door open for all to return to work with honor. We have issued no ultimatum nor have we employed any man to take a striker's place. The only new men we have employed have been common laborers to do work deserted through sympathy or otherwise by men whose organizations are not on strike."

"The work of turning engines and current repairs necessary to keep the railroad running (and as everyone has seen, it has been kept running) has been done by officers and their clerical forces. On their behalf and my own I am glad to testify that the striking employees, with few exceptions, have not molested them unlawfully. The cases of violence and sabotage which we have experienced have generally been traced to a few youthful adventurers and it has often developed that they were never on our pay roll."

"All of this is testimony that we have no quarrel with our men. More to that, I have myself had during the past week on the road many assurances that the great majority of the men have no quarrel with us. In this situation I have hoped that, having recorded their impressive protest against the award of the Labor Board, the men would see the wisdom of returning to work and accepting the Labor Board's invitation to go into a rehearing of their grievances. Of course, if law means anything, that is the only way the Labor Board can now deal with the question."

"Having said this much, it is only fair to add that, if it shall be necessary, we will undertake to run the railroad without the aid of those on strike. Unless the men soon return to work we shall deem it our duty to the public to put others in their places and invoke all the authority of the United States to protect the newcomers in their work. That protection has been offered."

Number Now Employed 60.6 Per Cent

Following a meeting Monday of the eastern Presidents' Conference, L. F. Loree issued a statement in which he said in part:

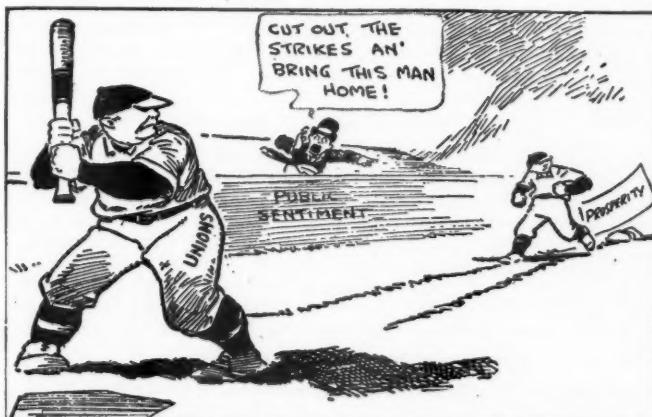
"The last information, for the month of April 1, 1922, of the Interstate Commerce Commission gives as employed on the railroads of the United States in the six shop crafts 351,834 men. In order to furnish work to as many as possible of the men the roads exerted great efforts, in some cases working a part of the force only in alternate weeks and in others greatly reducing the hours of labor, so that these forces were not averaging more than 40 hours each week and in numbers were much greater than were needed. The figures available indicate that on June 30 on the roads in the eastern traffic region there were in service about 145,872 men."

"From such sources of information as we have there are now employed in this region 88,404 men, not including the foremen, or 60.6 per cent, and as these men are working full time the actual work performed will compare favorably with that before the walkout. Especially is this true if we consider that there is a full complement of foremen and their assistants and that the efficiency has been greatly increased by the elimination of many rules designed to restrict output and the fact that one willing mechanic now does the work that formerly was taken up in routine by several, with the consequent delays."

"It may, therefore, be said that, so far as the eastern region is involved, the possibility of the strikers tying up the railroads has passed. What remains to be done is to preserve the public peace, to protect the old men and incorporate these new men in the communities where they are located, gradually recruiting the forces to normal through the employment of additional men or the return of the former employees for whom places can still be found."

Traffic Moving Without Interruption

Reports from individual roads in nearly all cases show a gradually increased percentage of shop forces at work and in practically every instance the statement is made that conditions show a marked improvement. The strikers' organizations have made much in their publicity concerning delays reported to passenger and fast freight trains, but they have not shown how much of the delay may be due to the strike as distinguished from delay which might occur under normal conditions. The strikers' publicity has also had a great deal to say concerning equipment condition notably with respect to an alleged failure to keep motive



Orr in the Chicago Tribune

A Little Sacrifice on His Part Would Help

this company, that the present unfortunate situation could be quickly cleared up, and the company earnestly invites the men to join in a conference for this purpose.

Unless those who left their positions are willing to return to work without further delay, or are willing and able to promptly join in such a conference as is suggested, it will be the duty of the Baltimore & Ohio Company to take such other steps as may be necessary and still possible in order to resume normal operations. I feel confident that if a conference can be arranged and if the parties to such conference are willing to approach the matter in a spirit of fairness and with a sincere desire to effect a settlement, a prompt and satisfactory conclusion can be reached. The Baltimore & Ohio Company, for which I am authorized to speak, will approach the matter in that spirit. The public has a right to expect all of us to make every reasonable effort to bring about an early settlement of this controversy in order that we may thereby be enabled to give to the public the service which it has a right to demand and expect.

On Wednesday evening Vice-President Galloway submitted to President Harding a copy of the road's proposals.

Southern Says It Has No Quarrel with Men

"We have no quarrel with our men. . . . We have issued no ultimatum nor have we employed any man to take a striker's place." These sentences are from a communica-

power in proper shape, but it is noticed that in general trains are being handled without unusual difficulty.

Recruiting continues in good volume, the railroads emphasizing that they have had sufficient men to permit of careful selection. An interesting feature is the advertising for men in the newspapers published in eastern industrial centers by roads such as the Denver & Rio Grand Western, the Great Northern, etc. The statement is made in some quarters that striking shopmen in large numbers are being hired on other roads.

The spokesman for the eastern roads is John G. Walber, secretary of the Bureau of Information of Eastern Railways. The information given out by Mr. Walber, however, has been of a general and rather interpretive character. The following reports have been given the *Railway Age* by individual roads, in most cases in response to telegraphic or other requests.

ATLANTIC COAST LINE

This company now has forces at work in place of striking shopmen equivalent to about 40 per cent of the forces employed just prior to the strike. Both passenger and freight service are normal. Forces are being recruited daily and the road reports that it will soon be able to resume all normal maintenance work.

BALTIMORE & OHIO

This company reports continued improvement. Many old employees are returning to the service. On July 21 the company reported a movement of 20,000 cars and gains in the number of employees at 32 points on its system. On that date it was announced that no more daily bulletins would be issued by the company until the result of the conference with striking employees, which began on July 25, was ascertained.

BANGOR & AROOSTOOK

This company is working a force of 317 men in its shops, compared with a normal force of 337—making its present labor strength 94 per cent of that of pre-strike days. Furthermore, of the present force but 11 are returned strikers. No delays or interruptions to any class of traffic have occurred which could be charged to the strike.

BOSTON & ALBANY

On July 26 this company reported as follows:
"Our conditions continue to improve. No interruption in freight or passenger service."

BOSTON & MAINE

This company's present shop forces number in excess of 50 per cent of normal. There have been no unusual interruption to traffic, either passenger or freight, and conditions are said to generally satisfactory.

BUFFALO, ROCHESTER & PITTSBURGH

Of this company's normal force of motive power mechanics, 50 per cent were working on July 26 as were 29 per cent of its car department mechanics and laborers, making 41 per cent of the shop employees taken as a whole. The company reports that it has had no interruptions to movement and that traffic conditions show daily improvement.

CENTRAL OF GEORGIA

A force of 785 men is now employed in this company's shops, representing 38 per cent of pre-strike strength. There has been no interruption to traffic, all freight being received and handled on time and passenger trains run according to schedule. No trains have been annulled. Conditions are reported as steadily improving.

CENTRAL OF NEW JERSEY

This road has a shop force of 2,416 men, out of a pre-strike total of 5,013. There have been no delays to trains on its lines chargeable to the strike. The company has no embargoes against any classes of traffic and is accepting all the business offered. Conditions are reported as steadily improving.

CHESAPEAKE & OHIO

Some new men are being employed to take the places of striking shopmen. Positions of clerks made vacant by the walkout which occurred on July 20 are being rapidly filled.

DELAWARE, LACKAWANNA & WESTERN

The Lackawanna reports a rapidly improving situation. It has suffered no delays to traffic since the strike began.

ERIE

Prior to the strike 9,450 men were employed by the contractors who operate this company's shops. The present force is 5,280 and of these 2,010 are old employees. There have been no interruptions to traffic on this road and conditions are very noticeably improved. During the first three weeks of July the road moved 243,612 loaded cars, a total comparable to that for the same period in June, and is accepting all business offered to it. Its suburban passenger trains are operating 95 per cent on time. The road has made no move toward the formation of a union among its present forces. There has been no destruction to property, although one man was killed in a minor disturbance at Hornell, N. Y., last week. Injunctions have been secured by the company at the following points: Jersey City, Hornell, Salamanca, Cleveland, Galion, Huntington, Meadville, Brier Hill and Kent. These injunctions are said to have been effective in breaking up picketing. State troopers are guarding company property at Port Jervis, N. Y., Susquehanna, Pa., and Hornell, N. Y. The road has plenty of equipment and has suffered no congestion of traffic.

LEHIGH VALLEY

"The Lehigh Valley has shown notable improvement since the last report. A few old men have returned to work but in addition the management has been able to recruit a considerable force of competent machinists, boilermakers, etc. This, with the fact that the Lehigh Valley has never been compelled to close its Easton back shop, because of the loyalty of the men there, has enabled the road to operate all its freight and passenger service without interruption.

"In accordance with the suggestion of the Labor Board a number of employees who remained loyal, together with some of the new men, have started a shop crafts organization and considerable progress has been made with it. The management, however, has taken no active part in its formation."

MAINE CENTRAL

On the morning of July 26 the road had a total of 616 men working out of a total on June 30 of 1,502. Of the present force 227 are old men and 389 are new employees. Mail, passenger and freight service has been fully maintained. The number of workmen increasing daily.

NEW YORK CENTRAL

This company on Thursday in a statement giving the reasons why "it is impossible that the striking shopmen be taken back with restoration of their former seniority" gave also the following figures as to the number of men affected: "20,000 shop workers of all classes were on the payrolls on June 30 and were affected by the strike call on the New York Central Railroad. On July 26 a total of 15,000 men were working in these positions and of these forces at present working, 57 per cent are old employees and 43 per cent are new workers employed since the strike."

NEW YORK, NEW HAVEN & HARTFORD

This company continues to maintain normal movement of freight and passenger traffic. Its force of skilled mechanics is being increased daily by the employment of new men and the road reports that its forces are rapidly approaching normal. Some delay to passenger trains has been reported during the past week due to storms, one of which caused washouts at Providence, R. I., on the night of July 23.

NORFOLK & WESTERN

This company tells the *Railway Age* of the situation on its lines as follows:

"In so far as strike of clerks is concerned, it amounts to nothing. There has been no interference with the orderly conduct of the business on this account and the positions vacated by them have been largely filled. With reference to strike of shopmen, some of the older employees have returned to service and we are hiring new men, being careful to select competent and desirable ones. Of course, traffic is to some extent affected, more particularly with reference to coal loading. Coal movement is probably between 50 and 60 per cent of the June movement which was abnormally large."

PENNSYLVANIA

On July 25 this company issued a statement which read:

"The most favorable situation that has existed on the Pennsylvania System at any time since the shopmen's strike began on July 1, was disclosed in today's reports from all regions of the system. Consistent and satisfactory gains were shown in the forces of every region."

"The total number of shopmen actually working on the entire system is 42,836, an increase, as compared with a week ago, of 1,851. An average week-day force under normal conditions would be approximately 55,000."

"The Eastern Region and the Altoona Works combined have

made a net gain, as compared with a week ago, of 420 men actually working; the Central Region has gained 746 men; the Northwestern Region, 331 men; the Southwestern Region, 354 men.

"The movement of freight, during the week just ended, was the heaviest that has been handled on the Pennsylvania System since the closing week in March last, when coal traffic was abnormally high in anticipation of the suspension in mining. The total number of freight cars dispatched last week was 734,872, and this total would have been considerably larger but for the fact that the current movement of coal is only approximately one-third of normal.

"From the point of view of on-time performance, the freight movement last week, of arranged and scheduled service, was practically 100 per cent perfect. Promptness of dispatching was considerably above normal, and unusually good records were made in the return of empty refrigerator and stock cars in order that the transportation of food supplies could be maintained uninterruptedly.

"Normal on-time performance was maintained in passenger service throughout all portions of the system. Last week showed the heaviest seashore and summer resort traffic of any period thus far during the present season, the volume of that class of travel being approximately 5 per cent greater than during the corresponding week a year ago.

"At no time since the strike began has any train movement, either passenger or freight, been canceled or interfered with, by any developments connected with the strike, on any portion of the Pennsylvania System."

PHILADELPHIA & READING

Publicity from the shopmen's organizations on Wednesday said that 1,000 Reading shopmen walked out that morning at Philadelphia, Harrisburg, Allentown and Tamaqua in sympathy with the strike on other roads. It was explained that the walkout took place at this late date because the majority of the shop workers on the Reading are affiliated with the American Federation of Railroad Workers and the present strikers had previously remained at work

because of the majority agreement. Inquiry addressed to the Reading management brought out the following details:

"After special effort on part of A. F. of L. this (Wednesday) morning, at various points on system, there are 318 men out, of a total of 8,040, or less than 4 per cent."

RICHMOND, FREDERICKSBURG & POTOMAC

Of a normal shop force of 981, this road now has 668 employees. There have been no interruptions to traffic and conditions are said to be improving as the strength of forces approaches normal.

SOUTHERN RAILWAY

The Southern Railway has made a separate agreement with its clerks, who had been threatening to go on strike and has proposed a conference with representatives of its shop employees. The Southern had not issued any ultimatum setting a date by which the strikers must return in order to retain their seniority and it has made no effort to employ new men.

VIRGINIAN

This road reports as follows:

"We have not undertaken to open back shops because of excellent condition of our power when strike was called. We have about 60 per cent of our normal force at work in roundhouses. We have had little or no interference with traffic except in maintaining our heavy pusher engines. This we have overcome and will soon be normal at all points. We are getting men from various sections of the country and some of our old men are returning to work."

WESTERN MARYLAND

This company, which has its shop work done by contractors, reports conditions normal, none of the contractors' employees having left the service on account of the July 1 strike. The road reports all traffic being handled currently and "in addition to" its own business "traffic of other railroads is being diverted via the Western Maryland."

The Strike Situation in the West

THE FOURTH week of the strike bore a less turbulent aspect on the western roads than those preceding. The disorders on the part of the strikers seem to have subsided to a great extent while those outbreaks which occurred were of a less serious nature than in the preceding weeks. This was due, in large measure, to state and federal intervention and the injunctions which have been granted the roads. The suspension of train service was much greater than heretofore, but most of this was due to the shortage of fuel. It is estimated that the total withdrawal of trains at the present time is approximately 300.

Included in the list of roads curtailing service was the Pere Marquette which removed 20 trains and shortened the runs of many others; the St. Louis-San Francisco dropped two trains between Birmingham and Memphis and the Wabash two between Detroit and St. Louis, two between Toledo and Fort Wayne and two between St. Louis and Decatur, Ill. The Chicago & North Western dropped seven trains on the Milwaukee division, ten Chicago suburban, and other trains on its western lines. The Kansas City Southern removed four; the Missouri, Kansas & Texas dropped its Katy Flier between Waco, Houston and Galveston, and merged six other trains. The Great Northern dropped a number of short run and branch line trains. The Chicago & Eastern Illinois is reported to have dropped 11 trains from its schedule. The Grand Trunk removed 16 trains, principally on its Michigan lines, four of which ran between Chicago and Detroit. The Ann Arbor has also dropped several trains from its schedule.

The gloomy cast that this curtailment gave the situation on the roads was offset, however, by the greatly increased recruiting of men to fill the places of those who went on strike. Sufficient men are available to fill all vacant positions and with the continued progress of recruiting the roads should have a full complement of men within a short time.

A number of restraining injunctions were granted. The Missouri Pacific and the St. Louis-San Francisco secured

temporary injunctions at Kansas City, Mo.; the Pere Marquette at Detroit; the Baltimore & Ohio and the Louisville & Nashville at East St. Louis; the Wabash at St. Louis and the Great Northern at St. Paul were also granted temporary injunctions. The injunctions granted the Chicago, Burlington & Quincy at Keokuk, Iowa and Chicago were made permanent and others were granted the Erie and the Chicago, Indianapolis & Louisville at Hammond, Ind. The Pullman Company, declaring that its employees were walking out in sympathy with the striking railway shopmen, also secured a restraining order against interference with its shops throughout the country.

State troops are on strike duty in nine states at the present time, but are encountering little disorder. Dispatching of state troops to centers of disorder was necessary in Kansas and Texas. Militia was ordered to Hoisington, Kansas, to do guard duty at the Missouri Pacific shops where rioting broke out last week and to Denison, Tex., where fresh outbreaks occurred. The situation at Denison had quieted for several days, and it was believed that troops would not be needed, but recent outbreaks forced Governor Neff to declare a state of martial law at that place, and to send troops to enforce the proclamation. The governor also issued two other proclamations placing the strike situation at Childress and Sherman under provisions of the "open port" law. State rangers will take charge at these places.

The situation on the Western lines, on July 25, may be summarized as follows: All freight is being moved as offered while passenger trains are being operated normally. Large numbers of men are being added to the shop forces and the number at work ranges from 23 to 75 per cent of the normal forces on the different roads. Freight car loadings reported for the first two weeks of July, as compared with the same weeks of last year, show increases ranging from 6 per cent to 53 per cent, the average being about 25 per cent. Railway fuel receipts are said to be satisfactory. Out of 22,644 cars of coal purchased by the lines with head-

quarters at Chicago since June 7, for delivery up to August 31, 60 per cent has already been received. This is in addition to the coal in storage.

The situation on a number of individual roads is reported below:

ATCHISON, TOPEKA & SANTA FE

The Atchison, Topeka & Santa Fe had 52 per cent of its normal force at work on July 25. No trains have been annulled nor have any embargos been issued against any kind of traffic. Both freight and passenger business have been better during the first three weeks of July than during the first three weeks in June. Eighty-seven per cent of the trains have arrived at their terminals on time since the strike started. At the Topeka shops, the number of cars repaired during the first three weeks of the strike averaged 44 per day, as against 74 per day for the corresponding period in June, but for the five days ending July 22, 77 cars were repaired per day, a gain of three per day over the average number repaired during the corresponding period in June, before the strike.

CHICAGO, BURLINGTON & QNINCY

Recruiting has been progressing steadily on the Chicago, Burlington & Quincy since July 10, 125 to 150 men being hired per day. The highest enrollment up to the present time was on July 24, when 455 men were employed, the greatest proportion of whom were skilled mechanics.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS

The Big Four is operating without serious difficulties, and is handling all traffic promptly. Passenger trains are running on time and recruiting is progressing favorably.

DENVER & RIO GRANDE WESTERN

This company has recruited a force of 324 men, its pre-strike enrollment being 2,400. Employment has been progressing in good shape, especially during the past week.

GREAT NORTHERN

This company reports conditions improving daily. On July 26 163 more men were working than on the previous day. The embargo has been raised in Montana and if the road is given necessary protection it says that it will be able to furnish sufficient men at Wolf Point, Havre, Whitefish and Troy to relieve the situation at an early date. The matter of securing protection in Montana has been up to this time the greatest hindrance the company has had. On July 25, 2,333 men were working out of a total pre-strike force of 9,253.

ILLINOIS CENTRAL

Conditions on this road are rapidly approaching normal, 9,514 shopmen being at work on July 24, as compared with a pre-strike force of 12,701. Little picketing or trouble with strikers is being experienced.

KANSAS CITY SOUTHERN

The Kansas City Southern with a shop force of approximately 15 per cent of normal is moving traffic normally. Men are being added daily and no serious disturbances have been encountered.

MISSOURI, KANSAS & TEXAS

The Missouri, Kansas & Texas, with a normal force of 4,200 men, has 1,300 at work. New men are being employed daily. A number of disturbances in Texas necessitated the calling out of troops.

MISSOURI PACIFIC

This company has a working force between 25 and 30 per cent of normal. There has been some tampering with engines and machinery on the part of strikers, but business and traffic movements are in a good condition.

NASHVILLE, CHATTANOOGA & ST. LOUIS

This company reports 1,687 men at work out of a normal force of 2,500. Only slight labor disturbances have been encountered.

ST. LOUIS-SAN FRANCISCO

The situation is improving. A 30 per cent of normal force is handling a heavy freight business without serious delays.

SOUTHERN PACIFIC

The Southern Pacific System with a normal complement of 9,000 reports 7,438 now working. Strikers have caused much trouble by picketing and intimidation. Full freight and passenger schedules are being maintained and other classes of employees are remaining neutral. In a telegram to Chairman Kruttschnitt, President Sproule made clear the road's attitude on the question

of restoring seniority rights to strikers. This telegram, which was made public in New York on July 26, follows:

"Press dispatches carry suggestions which leave the inference that negotiations may now be in progress between government and labor leaders that might result in strikers returning to work with their seniority rights unimpaired. So far as the Pacific system is concerned there is no need for such concession. We told the 5,000 men who stayed with us that their loyalty would be respected and their seniority rights, thus improved, would be protected.

"On the other hand, we have announced to the men who quit work that such of them as resumed work with us will do so as new men, taking their seniority from date and hour they resumed work. In employment of new men the question almost invariably asked has been answered by giving assurance that we will not displace them in order to take back deserters.

"Our officers unite in judgment that the backbone of the strike has been broken. We are constantly gaining accessions to workers and expect to have a high-grade labor organization for the Pacific system as a result which will be far more satisfactory to ourselves, to the government and to the men than under the disloyal labor leadership which has thrived upon unbalance to the detriment of the men and the whole country.

"Our officers unite in conviction that to bring deserters back by granting them restoration of their seniority rights would be for them the equivalent of winning the strike, because of surrender by the managements and the government, and in doing so the real intention of the labor leaders is to create such a condition as will make it impossible for the railroads of the country to win another strike, because men could not be found who would either stay with the company or take employment, if, after hardships of strike, they were to be displaced by strikers, who would show them but dastardly consideration as soon as they got into power again.

"We can, and will, win this strike on basis of Labor Board decision, which was the pretext for the strike; and the point of greatest importance at this time is that decision of Labor Board be sustained without tarnishing their authority by compromise."

UNION PACIFIC

This system has approximately 5,000 men employed in its shops, which constitutes 75 per cent of its normal force. A full schedule of passenger trains is being operated and freight is handled without delay.

* * * * *



Marcus in the New York Times

Nero

Colorado & Southern Assisted by Coal Strike

Beginning Late in May Coal Loadings Commenced to Be Much Ahead of Last Year's

THE COLORADO & SOUTHERN Lines operate a total of 1,809 miles of railroad of which 134 is operated under lease or contract. It also owns 132 miles which it does not operate. The system's main line extends from Orin, Wyo., where connection is made with the Chicago, Burlington & Quincy south through Cheyenne, Denver, Colorado Springs, Pueblo, Trinidad, etc., and thence southeast across the panhandle of Texas to Fort Worth. The system is divided into three main parts. The Colorado & Southern, operating 1,099 miles, includes the northern part of the system. The Fort Worth & Denver City, 454 miles, operates that part from the Texas state line, Texline, to Fort Worth. The Wichita Valley Lines, 256 miles, operate a line southwest from Wichita Falls. The system is tied together financially by the Colorado & Southern's ownership of practically all the capital stock of the other two companies. The Burlington has controlled the Colorado & Southern since 1908, this being exercised by majority stock control. On December 31, 1920 the Burlington owned \$23,657,500 of the C. & S. \$31,000,000 common stock, \$1,130,000 of the first preferred and \$6,078,700 second preferred, the C. & S. preferred issues totaling \$17,000,000.

The Colorado & Southern figures are reported separately for the three companies. In 1921 the parent company had an income balance transferred to profit and loss of \$870,156. This compared with \$1,926,066 in 1920 or with \$1,103,946 in 1919. Dividends for the year totaled \$680,000, this including 4 per cent on each of the two preferred issues. A dividend of 3 per cent, amounting to \$930,000, was declared on the common shares. This was the first common dividend since 1912; it was paid from surplus. Outstanding features in the 1921 income account were an increase in receipts in the form of dividends and miscellaneous interest from \$1,352,530 in 1920 to \$1,923,140 in 1921 and a decrease of about \$120,000 in the credit balance for equipment hire. Details concerning the income from operations are discussed below.

The Fort Worth & Denver City reported an income balance for the year of \$2,075,079, which compared with \$836,898 in 1920 and \$676,325 in 1919. Interest disbursements in 1921 were \$916,466; in 1920, \$639,152. The Wichita Valley had a net for 1921 of \$178,122; in 1920 of \$143,386.

While the Colorado & Southern annual report shows separate figures for the three constituent companies, it also gives a selection of certain grouped figures. These show that in 1921 as compared with 1920 the operating revenues of the three companies decreased \$4,930,059 or 15.8 per cent. The operating expenses decreased \$6,387,732 or 24.03 per cent. Net revenue from railway operations increased \$1,-

457,673 or 25.62 per cent and net railway operating income increased \$1,918,534 or 49.74 per cent. The system's operating ratio in 1921 was 72.80 per cent; in 1920, 81.77 per cent. The interesting feature is that whereas the net railway operating income of the Colorado & Southern decreased \$931,308, that of the Fort Worth & Denver City increased \$2,572,228. The latter company had a decrease of \$1,814,-290 in its operating revenues and a decrease of \$3,985,067 in operating expenses; it operated at 66.27 in 1921 as compared with 87.44 in 1920.

These details are possibly better shown in the figures of net railway operating income. The Colorado & Southern had a standard return of \$2,481,212; in 1920 it had a net after rentals of \$2,835,102; in 1921 its net after rentals was \$1,903,794, a decrease of \$931,308. The Fort Worth & Denver City had a standard return of \$1,891,386. In 1920 it had a net after rentals of \$884,885; in 1921 it earned \$3,-457,113, an increase of \$2,572,228. The Wichita Valley increased its net after rentals from \$136,791 in 1920 to \$414,404 in 1920.

The Colorado & Southern's tonnage in 1921 was 49.30 per cent bituminous coal. Products of agriculture made up 17.92 per cent. The tonnage of all commodities totaled 4,-753,055 which compared with 6,789,747 in 1920. The decreases in tonnage were general although coal got more than its share of the falling off. There was an increase in products of agriculture.

The Fort Worth & Denver City in 1921 moved 2,851,717 revenue tons; in 1920, 3,441,773. Of the 1921 tonnage 30.83 per cent was products of agriculture; the tonnage of this commodity did not increase greatly over 1920 but the percentage did; in 1920 it was only 25.17 per cent. Bituminous coal made up 17.11 per cent as compared with 21.78 per cent in 1920; the 1921 tonnage was 487,936; the 1920 figure was 749,623. Refined petroleum made up 454,643 tons in 1921, 15.94 per cent; in 1920, it made up 461,177 tons, 13.40 per cent.

The Wichita Valley tonnage in 1921 was 385,456. In 1920 it was 472,020. In 1921 products of agriculture made up 34.60 per cent; 133,380 tons, as compared with 171,832 tons or 34.6 per cent in 1920. Bituminous coal in 1921 made up only 10.90 per cent. Refined petroleum made up 69,168 tons or 17.94 per cent.

The Colorado & Southern owns the Colorado Springs & Cripple Creek District. This line it leased to another company for operation. The road has been in the hands of a receiver but the line has not been operated for some time, and no plan has been advanced for its reorganization. The entire capital stock which is owned by the Colorado & South-

COLORADO & SOUTHERN LINES—RAILWAY OPERATING INCOME

	Colorado & Southern		Fort Worth & Denver City		Wichita Valley	
	1921	1920	1921	1920	1921	1920
Railway operating revenues:						
Freight	\$9,897,761	\$11,934,164	\$8,027,522	\$8,337,901	\$1,269,502	\$1,215,504
Passenger	2,394,205	3,023,812	2,725,418	4,083,553	362,134	521,140
Total railway operating revenues..	13,223,220	16,223,954	11,334,958	13,149,248	1,723,110	1,838,145
Railway operating expenses:						
Maintenance of way and structures....	1,993,464	2,587,479	1,190,946	2,052,406	315,684	443,817
Maintenance of equipment.....	2,981,257	3,427,673	2,096,648	2,939,397	138,498	182,057
Traffic	146,129	145,867	136,825	96,794	406	966
Transportation	4,703,027	5,678,460	3,590,665	5,891,300	624,866	804,450
Total railway operating expenses....	10,523,890	12,572,507	7,512,206	11,497,273	1,097,987	1,452,036
Net revenue from railway operations....	2,699,330	3,651,447	3,822,753	1,651,976	625,123	386,110
Railway tax accruals.....	758,972	880,123	.385,026	388,336	70,121	70,870
Railway operating income.....	1,932,714	2,768,526	3,434,990	1,262,207	554,650	315,160
Equipment rents (net).....	33,480	124,257	21,523	Dr. 374,709	Dr. 155,430	Dr. 186,378
Joint facility rents (net).....	Dr. 62,400	Dr. 57,681	601	Dr. 2,612	15,183	8,008
Net railway operating income.....	1,903,794	2,835,102	3,457,113	884,885	414,404	136,791

ern has been determined to be worthless and the C. & S. profit and loss account for 1921 shows a debit charge of \$1,397,013 representing the book value of the capital stock and certificates of indebtedness of the Colorado Springs & Cripple Creek District Railway Company.

The fortunes of the Trinity & Brazos Valley, in which the Colorado & Southern and the Rock Island each have a half interest, were in 1921 quite the opposite, this more pleasant state of affairs being due to the business derived from the opening of the Mexia (Texas) oil field and, according to the C. & S. annual report, to the "good management of the receiver." The T. & B. V. in 1921 had total operating revenues of \$3,501,010 as compared with \$2,273,445 in 1920 and its net railway operating income for 1921 was \$288,066 as compared with a deficit in 1920 of \$645,513.

The Colorado & Southern has been assisted rather than hurt by the coal strike due to the manner in which the Colorado mines are operating. This improvement, however, was not in evidence until late in May. Coal loadings in March—before the beginning of the strike—ran about 1,400 cars weekly. In April they averaged about 550 weekly. They increased gradually in May and figures for recent weeks have approached 1,300. Coal loadings at this time last year approximated 1,000 weekly. The effect has been reflected in total loadings. In the week ended July 1, the total loadings of all commodities were 2,088 as compared with 1,602 for the same week last year. Traffic received from connections for the same week totaled 1,701 cars as compared with 786.

The latest figures for net ton-miles (revenue and non-revenue freight) are those for April and the four months, the 1922 four months total being 232,153,000 as compared with 247,995,000 in 1921. These figures are not particularly

North Eastern Railway, England, Tries Out New Electric Locomotive

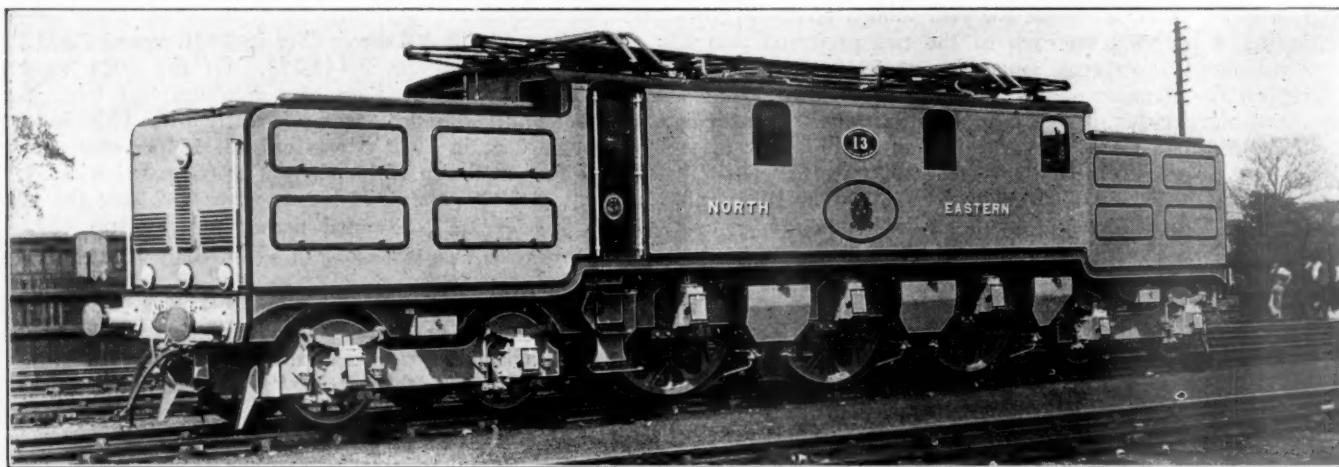
A NEW TYPE of electric locomotive for high speed passenger service, which has a symmetrical wheel arrangement and unusually large driving wheels, is being tried out on the North Eastern Railway in England. The locomotive was designed by Sir Vincent L. Raven, chief mechanical engineer, North Eastern Railway, the mechanical parts were built by the Locomotive Works at Darlington and the electrical equipment was supplied by the Metropolitan-Vickers Company. Only one locomotive has been built.

The locomotive is designed to haul a 450-ton express

GENERAL DIMENSIONS OF NORTH EASTERN PASSENGER LOCOMOTIVES

Wheel arrangement	4-6-4
Electrical system	Direct Current
Voltage	1,500
Length over all	53 ft. 6 in.
Width over all	8 ft. 10 in.
Height, pantograph locked down	13 ft. 0 3/4 in.
Driving wheel diameter	80 in.
Pony wheel diameter	43 1/4 in.
Rigid wheel base	16 ft. 0 in.
Weight of locomotive	102 tons.
Weight per driving axle	18 tons 10 cwt.
One hour rating—Tractive effort	15,900 lb.
Speed	43 m.p.h.
Horse-power	1,800
Continuous rating—Tractive effort	9,480 lb.
Speed	51.5 m.p.h.
Horse-power	1,300

passenger train at an average speed of 65 miles an hour on level tangent track. The running gear is designed for a maximum safe speed of 90 miles an hour without doing damage to the mechanical parts of the locomotive, which is of the 4-6-4 type and consists of main frames mounted on



High-Speed, 1,500-Volt, Direct Current Electric Passenger Locomotive Built for the North Eastern Railway

favorable but should show some improvement with the inclusion of the June or later figures. Net after rentals figures are available for May. For the five months ending May 31 the net this year was \$564,508 as compared with \$852,147 in the same period of last year. The Fort Worth & Denver City figures are much more favorable. For the first five months of 1922 that company has made a net after rentals of \$916,218 as compared with \$1,086,513 in the first five months of 1921. Its tonnage is also running behind that of last year, the four months net ton-mile figures being for 1922, 150,137,000 and for 1921, 180,919,000.

TWELVE STEAMERS are now engaged in carrying iron ore from Newfoundland to Germany via Rotterdam, and it is estimated that about 750,000 tons will have been taken across by the end of the year.

three driving axles with three pairs of driving wheels 6 ft. 8 in. in diameter, and a four-wheel truck at each end. The cab and sloping ends are rigidly fixed to the main frames, and are provided with the necessary supporting members for carrying the auxiliary and control equipment.

The current is collected from the overhead trolley by pantographs mounted on the roof at each end of the center compartment. The main traction motors, which are of the twin-armature type, are rigidly fixed to the main frame of the locomotive, and transmit the torque to a gear wheel mounted on a hollow shaft or quill. The connection between the quill and driving wheels is through springs. The high tension apparatus is located in one of the sloping ends; the other sloping end contains an electric boiler for supplying steam for train heating.

The capacity of the locomotive is 1,800 hp. one hour rating, or 1,260 hp. continuous rating.

The locomotive was built for running on the main line, but at present trials can only be carried out on the Newport-Shildon branch, which has the same voltage which the locomotive is designed for.

The satisfactory result of the trial clearly indicated that the full horse-power for which the locomotive was designed could be developed. The test further proved that the heavy

grades on this line could be dealt with in the manner anticipated. The results of the trial showed that, when this locomotive is put on the main line, it will be able to take the heavy passenger traffic up the grades at a higher speed than steam locomotives are able to do at the present time, and that it will be able to maintain a faster schedule without running excessive speeds on the level and down grade.

Great Northern Ore Traffic Will Help 1922 Net

Ore Loadings Increasing Rapidly After Long Period at Low Level
—Totaled 10,149 Week Ending July 1

WHEN, IN MARCH, the Great Northern directors changed the dividend payments on the preferred stock from a quarterly to a semi-annual basis, there was much uncertainty in financial circles as to whether the company would be able to maintain the seven per cent rate. This uncertainty was due not only to the statements issued at the time by the chairman of the board, but also to the rather poor earnings which the Great Northern was then reporting and had been reporting over an extended period of time. A few weeks ago the directors declared a semi-annual dividend of 3½ per cent, thus maintaining the regular seven per cent dividend rate. It is not difficult to give the declaration of the regular dividend even more importance than that it retained the regular rate. We believe that future earnings reports will show that it will have marked the long hoped for change in Great Northern fortunes. The outstanding reason for this opinion is that the Great Northern has within the last month begun to move iron ore in rapidly increasing volume. This, combined with the expansion of traffic in other classes of tonnage and the fact that Great Northern is operating on a very economical basis, should be reflected in the future monthly earnings statements.

It was primarily the Burlington's extra dividends which brought the Great Northern through in 1921. There accrued to the Great Northern, Burlington dividend payments amounting to \$21,809,560. In addition, the Great Northern shows in its 1921 income statement the sum of \$7,233,100 interest on bonds of the Spokane, Portland & Seattle, representing accruals for the period from March 1, 1915, to March 1, 1920, of which, it is noted, \$1,005,379 has been paid. The net railway operating income for the year was \$12,866,411. The income statement shows a balance after the seven per cent dividends and appropriations to sinking and other reserve funds of \$10,982,668. In 1920 the income balance was \$1,815,497.

The net railway operating income of \$12,866,411 in 1921 represented a marked increase over 1920, but it was less than one-half the figure that was set for the Great Northern's standard return during federal control, which was \$28,613,045. During federal control and continuing until quite recently the Great Northern showed extremely poor net earnings. In 1918 its net after rentals was about \$11,978,800. In 1919 it reported about \$12,459,620 and in 1920 it was but \$3,000,000, the total for those three years being less than the standard return for one year.

Operating Expenses Decreased 29.36 Per Cent

The 1921 result was brought about by very drastic economies. As compared with 1920, the road in 1921 carried 40.72 per cent less revenue tons and 32.61 less revenue ton-miles. Its freight revenues were decreased 16.78 per cent and its gross operating revenues 17.36 per cent. On the other hand, it reduced its operating expenses 29.36 per cent. Main-

tenance of way expenses were reduced 46.09 per cent; maintenance of equipment, 21.18 per cent and transportation 27.28 per cent. There were but few roads that were confronted with a situation quite as difficult as was the Great Northern's in 1921, and there were few that came through with better results under comparable circumstances.

The revenue tonnage in 1921 was 19,533,134 as compared with 32,948,292 in 1920, the reduction being 13,415,158 tons. The average haul in 1921 was 293.91 miles; in 1920, 258.55. This explains why it was that the revenue ton-miles, 5,740,921,478, represented a reduction of 32.61 per cent, whereas the reduction in revenue tons was 40.7 per cent. The tonnage that suffered most strikingly was iron ore. In 1920 the Great Northern moved 299,471 cars and 14,755,241 tons of iron ore; in 1921 it moved but 90,824 cars and 5,048,120 tons, the reduction in this important commodity being, therefore, something like 65 per cent. Forest products in 1921 made up 2,597,018 tons as against 3,804,135 tons in 1920. In the case of farm products there was an increase, notably in wheat, the 1921 tonnage of the latter being 2,548,124 as against 1,928,737 in 1920.

The 1921 freight revenues were \$74,700,241. In 1920 they were \$89,760,845, the reduction being \$15,060,605 or 16.78 per cent. Total revenues were \$101,317,204, as compared with \$122,597,865 in 1920, the reduction being \$21,280,661 or 17.36 per cent. The reductions in operating expenses, which amounted to \$33,450,202 or 29.36 per cent, were as follows:

	1921	1920	Decrease	Per cent
Maintenance of way.....	\$13,865,917	\$25,718,561	\$11,852,644	46.09
Maintenance of equipment.....	21,075,308	26,739,434	5,664,126	21.18
Transportation	40,494,719	55,684,548	15,189,829	27.28
Total	80,496,913	113,947,115	33,450,202	29.36

In 1921 the operating ratio was 79.45; in 1920 the Great Northern operated at 92.94. Now, of course, the first reason for the sharp decreases in expenses in 1921 as compared with 1920 was the fact that the 1920 expenses were abnormally high. A second reason was the severe decline in traffic, but the outstanding factor is that the Great Northern was able to take its situation in hand and bring things back to a more normal basis. The striking feature in the reduction in expenses is the decrease of 46.09 per cent in maintenance of way. It is worth noting, first, that in 1920 as compared with 1919 the road had an increase in this item of 41.61 per cent. Second, while the 1921 reduction was due to some extent to the decreased traffic, the annual report also says, "contributing factors were the favorable weather conditions and the improved individual performance of the employees. The tie and rail renewals in 1921 amounted to \$2,496,160 as compared with \$2,629,583 in 1920, practically the same for both years. There was no curtailment of the renewal of ties and rails and the track was maintained up to standard. The company, however, suspended certain other work, such as cutting grass and weeds and removal of snow and ice,

the effect of which was only transitory and which did not impair the road for safe operation."

Improvement in First Four Months

The idea was expressed above that Great Northern earnings should show a marked improvement in coming months. The latest earnings report we have at this writing is that for May and the first five months of 1922. The statement shows gross of \$33,487,954 for the five months as compared with \$33,455,184 in the first five months of 1921. Expenses were \$28,937,099 as compared with \$32,653,805 in the same period of last year, which indicates that the economy effected in 1921 is being continued. The result was a net after rentals for the first five months of this year of \$2,208,792 as against a deficit after rentals last year of \$2,799,145, an improvement of over \$5,000,000. The May operating ratio was 81.3; for the four months it was 86.5. The traffic figures show a similar improvement. For the first five months of 1922 the Great Northern moved 2,538,545,000 net ton-miles (including revenue and non-revenue freight) as compared with 2,162,584,000 net ton-miles in the first five months of 1921, which shows that the revival of business has finally reached the Great Northern. The traffic on this system does not run large in the early part of the year. If, however, the road thus improved its position in the months of light traffic, the situation augurs well for the heavy traffic months later in the year.

Ore Loadings Show Rapid Increase

Although the June earnings figures are not yet available, the indications are that they will be much better than those for May. They will unquestionably show the effect of increasing ore traffic. After a long period characterized by the small amount of this tonnage, this traffic has again begun to move and in rapidly increasing volume. It began about the middle of April at the opening of the season of navigation on the Great Lakes. Prior to that time the ore loadings ran less than 100 cars weekly. In the week ending April 15 they were only 166 cars; the following week they jumped to 1,138 and for the week ending April 29 they were 2,006. There was a progressive increase during May. For the week of May 20 the figure was 2,436; for that of May 27, 3,460. The June figures showed the following favorable results: Week ending June 3—4,387; June 10—6,479; June 17—7,066; June 24—8,961; July 1—10,149. This last figure begins to approach normal business levels. In 1920, when tonnage was running heavy, weekly loadings of ore were at a rate of 10,000 cars weekly. In September they reached over 11,000. Ore in 1920 made up over 44 per cent of the Great Northern's total tonnage so the relative importance of the ore traffic will be readily appreciated. It has already been noted that the 1921 ore tonnage was about 65 per cent less than that of 1920; in May and June, 1921, ore loadings were running about 4,000 cars weekly. The rapidity of the present increase in ore traffic is a factor to be watched with interest as it will have a most important effect on Great Northern results.

In addition to ore, the Great Northern is also showing improvement in other commodities. Forest products this year have been ahead of the 1921 loadings for some months. The week ending June 24 was a typical week in this respect, the loadings of forest products being 2,749 cars as compared with 1,627 for the same week of last year. Grain loadings are ahead of last year. Coal is, comparatively speaking, not an important commodity to the Great Northern. The loadings have been, however, ahead of last year, the loadings during the past three months ranging from 400 to 900 cars a week. Total loadings of all commodities have been running slightly ahead of the loadings for the comparable weeks of last year, that is up to the beginning of June, when the great increase in ore loadings began to put the 1922 figures much ahead. The figures show the totals to be as

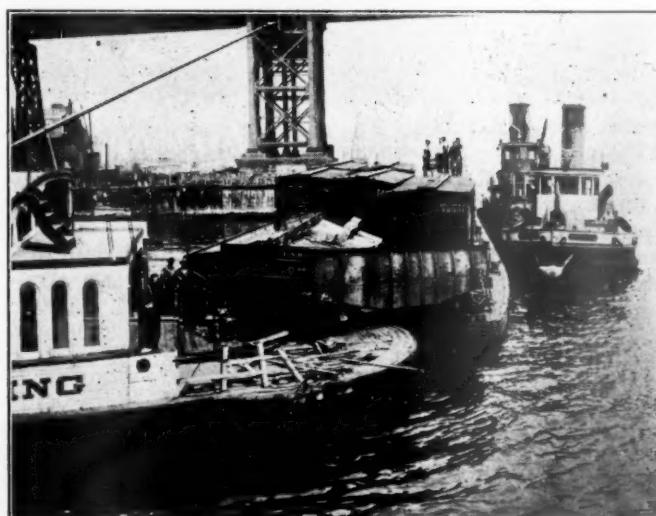
follows: For week ending June 3, 13,375 as compared with 11,976 for the same week last year; June 10, 16,468 compared with 13,446; June 17, 17,061 compared with 12,273; June 24, 18,978 compared with 12,878. It will be a matter for surprise, it would seem, if the June earnings should not show some rather striking figures.

The Great Northern, taking things as a whole, seems to have finally made a change for the better. Its traffic is rapidly increasing, especially in its two important classes of ore and forest products, and the fact that the tonnage is being handled on a more economical basis should show in the size of the figure of net railway operating income. It is, of course, a question whether the road will be able in 1922 to restore its position to that of before the war when it was able to operate at 60 per cent, but there can be no question that the 1922 results will be strikingly better than those of 1921.

There may be some adverse effect from the present shopmen's strike. In the first five months of this year, however, the Great Northern earned practically \$5,000,000 more net than it did in the first five months of 1921. It may, of course, not be able to keep up this record throughout the year, but it is presumably safe to assume that the system will earn \$10,000,000 more in 1922 than in 1921. If this proves to be the case the net railway operating income for this year will approximate \$23,000,000. Other income will bring this up to \$25,000,000 or \$26,000,000. As the fixed charges are \$8,000,000 this will leave \$17,000,000 or \$18,000,000, or practically seven per cent on the stock. The evidence is that the poor earnings of the federal control period can be regarded as having been definitely left behind. The seven per cent dividend now seems to be safe.

THE SOUTHERN PACIFIC received from the Union Pacific at Ogden 580,000 tons of freight and delivered to the Union Pacific at Ogden 1,332,000 tons of freight in the year 1921, William Sproule, president of the Southern Pacific, pointed out in a recent statement.

"Contrast this with the Sunset Route about which so much has been said," Mr. Sproule continued. "In 1921 we delivered at El Paso to the Sunset Route 348,000 tons of freight and received from them 412,000 tons of freight, showing how little figure the El Paso route cuts in comparison with the Southern Pacific's great contribution to the Ogden route."



P. & A. Photo

When a Ferry Boat Crashed Into a Car Float Under Brooklyn Bridge, New York

Danish Railroads Benefit From Tie Preservation*

Careful Records of Renewals Over Long Period Demonstrate Advantages of Timber Treatment

RATIONAL IMPREGNATION of railway ties was introduced in Denmark over 30 years ago by starting a plant in the provincial town of Koge on the Baltic coast. During the first five or six years the activity of the plant was very restricted as only the state railways employed impregnation and that only as applied to the roads on the island of Zealand. In 1899 the second plant was built at Horsens and at the present time all railways in Denmark with a single exception use pressure treated ties.

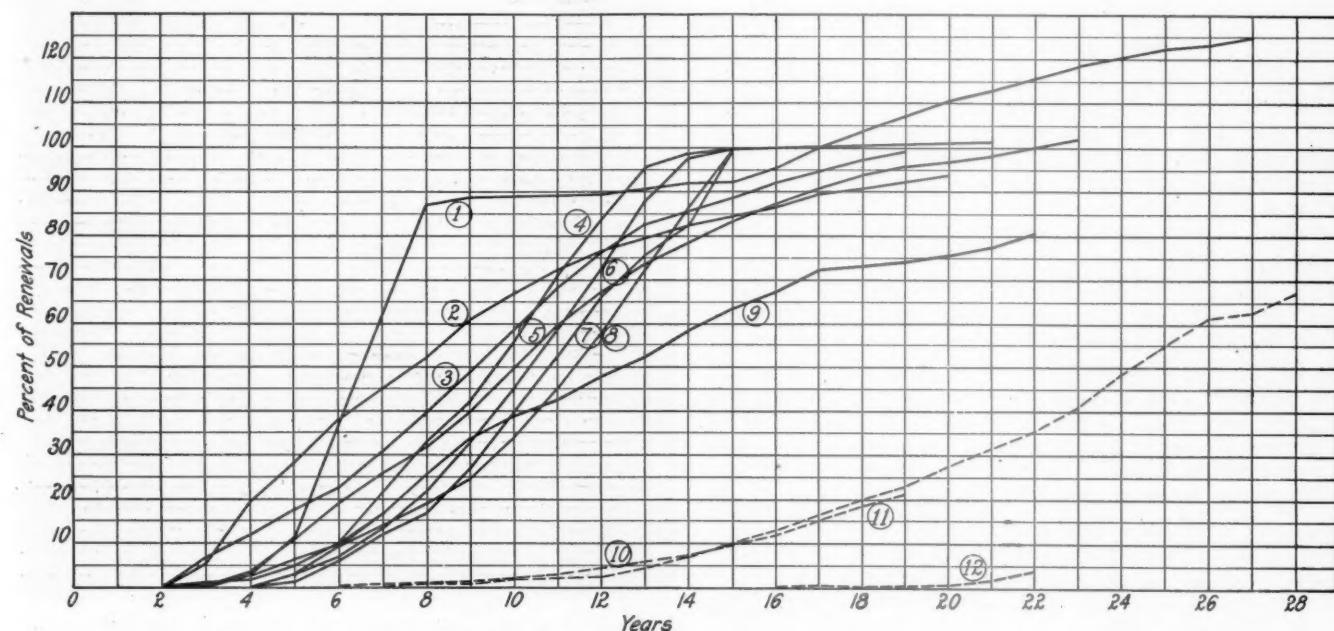
Various Preservatives Have Been Used

A mixture of zinc chloride and creosote oil has been used from the first in Denmark for timber treatment. During the war, however, it became necessary to resort to treat-

As is known, the various salts are not adapted for impregnation to beech. Only tar oil should be used for this species of wood, whereby it acquires an excellent durability. For lack of tar oil a limited number of beech ties were impregnated with crude naphthalene. Naphthalene, however, was found too difficult to handle since it stiffens even at quite high temperatures and the treatment of beech with it was soon discontinued.

Tie Renewals

The Danish State Railways Administration has for years kept record of the renewals of impregnated ties from year to year. The number of renewals show also the number of ties taken out during the year. An essential number of these



Renewals of Untreated and Treated Pine and Beech Ties on the Danish Railways

1. Originally built with green Pomeranian pine ties. Renewals made with treated Pomeranian pine ties.
2. Originally built with green Swedish pine ties.
3. Originally built with green Swedish pine ties. Renewals made with treated Pomeranian pine ties.
4. Originally built with green Swedish pine ties. Renewals made with treated Pomeranian pine ties.
5. Originally built with green Swedish pine ties. Renewals made with specially treated Pomeranian pine ties.
6. Originally built with green Swedish pine ties.
7. Built with green Swedish pine ties. Renewals made with treated Pomeranian pine ties.
8. Originally built with green Swedish pine ties. Renewals made with treated Pomeranian pine ties.
9. Originally built with green Swedish pine ties. Renewals made with treated Pomeranian pine ties.
10. Average renewals of treated pine ties, as well as some beech, years 1889-1918.
11. Originally built with Pomeranian pine ties.
12. Originally built with treated 5-in. by 10-in. Dantzig pine ties.

ment with dinitrophenol, sodium-silico-fluoride and crude naphthalene. Both dinitrophenol and sodium-silico-fluoride are salts soluble in water. Both substances possess good decay-preventing qualities, but their defect, as in the case of all salts used for impregnation, is that in the course of time they leach out. There is also to be considered the inconvenience arising from their use by reason of the fact that the wood after full-cell impregnation is heavy and wet, and must remain piled for a considerable time before it can be used. Another difficulty in the use of sodium-silico-fluoride is that it is hard to dissolve, necessitating the use of very warm liquid to obtain sufficient penetration.

*From a paper by A. Collstrop, of Denmark, translated by M. P. Jensen, and Published by the United States Forest Products Laboratory, Madison, Wis.

ties are, however, presumably untreated, since of late years they have not been kept separate. However, the figures from which the accompanying curves were made represent in the main the true conditions.

The renewals represent both beech and pine. For 1908 the beech ties were impregnated with a mixture of chloride of zinc and tar oil, a practice affecting the renewal unfavorably since these beech ties have lasted hardly more than 10 years. The beech ties are now impregnated exclusively with tar oil and the result is an excellent tie, provided it has no red heartwood. In renewal, all ties are considered damaged which have been renewed for mechanical reasons.

In the reports of the State Railways, in the peninsula of Jutland and the island of Funen, the number of ties

renewed annually was estimated in accordance with the number of ties in stock at the close of the fiscal year with the following results:

In 1897-1898.....	6.77 per cent
In 1898-1899.....	7.24 per cent
In 1899-1900.....	6.50 per cent
In 1900-1901.....	6.53 per cent
In 1901-1902.....	8.23 per cent

In 1900 the treating plant at Horsens was started and the annual renewals in recent fiscal years for the Danish Kingdom are as follows:

In 1913-1914.....	3.20 per cent
In 1914-1915.....	3.05 per cent
In 1915-1916.....	2.98 per cent
In 1916-1917.....	3.11 per cent
In 1917-1918.....	2.50 per cent
In 1918-1919.....	2.26 per cent
In 1919-1920.....	2.48 per cent

These records show among other things that in the renewals for ordinary maintenance of late years only about 115,000 ties have been used, as compared with 300,000, which would have had to have been renewed if the annual renewal requirements had remained as high as they were initially. While this result is due, to a certain extent of course, to the many improvements in surface construction of late years, as tie plates, better ballast, use of screw-spikes, etc., it is principally the result of impregnation.

The Records for Certain Roads

In addition to the information on tie renewals to be obtained from the accompanying chart the following statements may well be noted respecting certain roads: The Slangerup Railway was opened for traffic on April 20, 1906. Originally constructed with 53,700, 6-in. by 8-in. by 8 ft. ties impregnated with zinc-chloride and tar oil, there have been exchanged in renewals 338 ties, or 0.63 per cent after 14 years of service.

That portion of the Naestved-Praestoe-Mern Railway, opened for traffic on March 20, 1900, was laid with 9,889 6 1/4 in. by 8 1/4 in. untreated Swedish pine ties and 22,344 impregnated Swedish pine ties of the same size. After 20 years of traffic over this section there has been a renewal of 10 per cent of the impregnated ties and 84 per cent of the untreated ties. That portion of the same line opened for traffic on November 16, 1913, was laid with 17,200, 6-in. by 8-in. by 8 ft. Pomeranian pine ties impregnated with tar oil. Of these none have yet been renewed.

The Odense-Norre-Broby Railway, opened for traffic October 3, 1906, was originally constructed with about 75,000 Pomeranian pine ties impregnated with zinc-chloride and tar oil. After 13 1/2 years of service no renewals had been made. The Langeland Railway, opened for traffic on October 5, 1911, was originally constructed with about 54,000 Pomeranian pine ties, impregnated with tar oil, of which only 50 ties have been renewed.

As compared with the renewal records of these roads, records for the Veile-Vandel-Grinsted Railway, opened for traffic on September 10, 1897, and constructed with about 40,000 6-in. by 8-in. by 8-ft. untreated Swedish pine ties, are as follows:

After 4 years.....	1 per cent renewal
After 5 years.....	4 per cent renewal
After 6 years.....	7 per cent renewal
After 7 years.....	11 per cent renewal
After 8 years.....	16 per cent renewal
After 9 years.....	20 per cent renewal
After 10 years.....	26 per cent renewal
After 11 years.....	32 per cent renewal
After 12 years.....	37 per cent renewal
After 13 years.....	43 per cent renewal
After 14 years.....	49 per cent renewal
After 15 years.....	55 per cent renewal
After 16 years.....	61 per cent renewal
After 17 years.....	67 per cent renewal
After 18 years.....	74 per cent renewal
After 19 years.....	90 per cent renewal
After 20 years.....	93 per cent renewal
After 21 years.....	98 per cent renewal
After 22 years.....	102 per cent renewal

The renewals have been made principally with impregnated pine ties and the record of renewals is similar to that of several other roads.

Changes in Design of Elvin Stoker

IN THE ORIGINAL design of the Elvin Stoker a screw conveyor was used to carry the coal forward from the tender to the screw conveyor that delivers it to the elevator. In machines now being constructed the Elvin Mechanical Stoker Company, New York, is applying an improved type of chain belt feeder combined with a reciprocating crusher.

The feeder consists of four endless drag chains in a wide, shallow trough. The rate at which coal is delivered to the stoker is governed by the speed of the chains. They are fed forward intermittently at any rate required by the operator, delivering coal at any desired rate up to the maximum capacity of about seven tons per hour.

Coal which does not require crushing passes through four slots just back of the main crusher jaws, leaving the crusher to handle only the coal which requires breaking in order to reduce it to the proper size for the stoker shovels. No slide plates are used over the chains as the feeder operates under a full load of coal with a relatively small consumption of



A View of Feeder and Crusher with Tender Deck Removed

power. There is no possibility of injury to anyone walking back in the tender as the maximum speed of the chains is only about six feet per minute.

The crusher has a single crushing roll which revolves backward and forward through a partial revolution. The crusher is ahead of the coal gates and is not covered even when the tank is full of coal, being in plain view at all times during operation. Any obstruction in the crusher will stop the entire machine thus making its presence known. By reversing the stoker engine the crusher jaws can be opened allowing the foreign matter to be removed. The cover plate over the crusher is normally set at an angle to form a guard; when laid flat it forms a shovel plate for shoveling coal by hand on sidings or at terminals.

In order to compensate for the variable loads which are imposed by the crusher the stoker engine has been provided with a simple and compact governor apparatus. This operates on the hydraulic principle utilizing the varied pressure from a small gear pump to operate a balanced piston control valve. By means of the governor the stoker speed is maintained at any rate desired by the operator regardless of whether the fuel supply consists of slack coal or lumps or a mixture of both.

General News Department

Sleeping cars are now in use on the Alaska railroad, according to a recent press dispatch from Anchorage. Anchorage is 114 miles north of Seward. From there the sleepers are said to be in use to Fairbanks, the northern terminus of the road. Passengers will be allowed the use of the cars at division points where, heretofore, they had to sleep in "roadhouses." According to the latest time table of the road, as given in the Official Guide, passengers going from Anchorage to Fairbanks have to stop over night at Curry, 135 miles from Anchorage and again at McKinley Park, 99 miles from Curry. From McKinley Park to Fairbanks the distance is 120 miles.

L. & N. Veterans Receive Medals

Veteran employees of the Louisville & Nashville, at a meeting in Nashville, Tenn., on June 27 were presented with medals recognizing their length of service. Large numbers of officers as well as of employees, together with families and friends, attended the ceremony in the Young Men's Christian Association Building. An address was given by Rev. J. H. Parsons. The medals are of five different kinds: bronze, silver, silver with colored enamel, gold with colored enamel and gold with diamonds, the most costly going to the men of longest service. The total number awarded was 292, as follows: to employees over 45 years in service three; 25 to 45 years, 22; 25 to 35 years, 34; 15 to 25 years, 233.

County Seats Without Railroads

Traveling inspectors for the Missouri state boards have recently reported that of the 114 county seats in that state, 25 are without railroad facilities of any sort while several others have only meagre train service. The majority of the county seats in question are in the central and south central part of the state and only one of the 25 has more than 1,000 inhabitants. The largest county seat without railroad connections is Lebanon, Laclede county, with a population of 2,848, while the smallest is Danville, in Montgomery county, with 76. The most inconvenient county seat to reach is Gainesville, Ozark county, which is 43 miles from West Plains, the nearest railroad point.

Six Killed in Frisco Head-on Collision

Six persons were killed and a number injured when St. Louis-San Francisco passenger trains No. 2 "Texas Special," eastbound, and No. 9 "Meteor," westbound, met in a head-on collision at 3:47 a. m. on July 22, at Logan, Mo., where No. 2 was waiting on the main track. The wreck was the result of the engineer of train No. 9 failing to observe orders to take the siding at Logan, as well as disregarding the automatic signals. He had received orders at Billings, Mo., five miles east of Logan, but overlooked them and ran past the block signal, into No. 2, which was standing clear of the switch. He was killed, as were five passengers, all of the same family.

D. T. & I. Proposes Stock Ownership by Employees

The Detroit, Toledo & Ironton, Mr. Ford's railroad, on July 19, petitioned the Michigan Public Utilities Commission for permission to issue certificates of indebtedness up to \$1,000,000, which will be sold only to its employees, the request stating that the purpose of the certificates is to "promote a sense of participation in the company, its welfare and its earnings." According to the present plan the certificates are to be issued in \$100 denominations and will be non-negotiable. The company has 2,225 employees, with average earnings of \$185 a month. The proposal is that these employees shall pay five per cent of their earnings month by month until the securities are settled for in full. The rate of

interest will be determined by the board of directors of the company, although no set interest will be guaranteed. The funds derived from the money paid by the employees will be invested at the discretion of the directors.

The request to the utilities commission to sanction the issue of these certificates raises a new question. The Interstate Commerce Commission claims to exercise jurisdiction over the issue of railroad securities, and the Michigan Public Utilities Commission contends that it is vested by state law with authority over all issues of securities by Michigan railroads. The Detroit, Toledo & Ironton first went to the Interstate Commerce Commission to get authority to issue the certificates and the latter suggested that the case would be facilitated by getting an informal approval of the Michigan commission, and the latter now has the petition.

British Train Control Report

A limited number of copies of the report recently issued by the Ministry of Transport on automatic train control—a 33 page pamphlet, including appendices—will be available at the New York office of the *Railway Age* at 50 cents a copy.

The report, which was abstracted in the *Railway Age* of July 8, page 80 and July 22, page 149, is signed by the following:

Col. J. W. Pringle, Chief Inspecting Officer, Chairman.
W. C. Acfeld, Signal Supt., Midland Ry.
E. C. Cox, Supt., S. E. & Chatham Ry.
Maj. C. H. W. Edmonds.
H. N. Gresley, Locomotive Engineer (superintendent of motive power), Great Northern Ry.
Maj. G. L. Hall, Inspecting Officer.
Hon. J. H. Thomas, General Secretary, National Union of Railwaymen.
Sir Robert Turnbull, director, L. & N. W. Ry.

The report says that the cost of the committee's inquiry, including the cost of printing the report, was £75 2s. 6d. (\$334).

Prompt Settlement of Freight Claims

C. M. MacDonald, freight claim agent of the Boston & Maine, reports that during the first five months of this year 65 per cent of the freight claims paid by his office were settled within 30 days; 12,000 being thus settled, out of a total of 18,544. Another 18 per cent was settled within 90 days, and about 3,000, or 17 per cent, were over 90 days in course of settlement. In this connection it is to be noted that here, as in the other departments of railroad operation, the person in immediate charge frequently finds himself in some degree thwarted by governmental regulations. The claim agent who wishes to expedite matters may often be justified in paying a claim before the claimant has furnished full and legal proof that the amount is due him; but under the rulings of the Interstate Commerce Commission it is necessary in all cases that the investigation of a claim shall be thorough, "and must disclose a lawful basis for payment before the claim is adjusted." This requirement applies, of course, in the case of every one of the several carriers that may be interested in a claim.

On the Boston & Maine there has also been a noticeable improvement in the freight service, resulting in a smaller number of claims being presented. At the close of business on December 31, 1920, there were outstanding 8,042 loss and damage claims; one year later the total was 3,929, and on May 31, 1922, the number unsettled was but 2,980. This last number is 63 per cent less than the total at the end of 1920. There has been also a marked decrease in the gross amount paid on claims, although this is partly due to the lower level of commodity prices at the present time as compared with a year ago. The percentage of loss and damage payments to gross freight revenue, for the first five months of 1922, was 1.21, whereas that for the twelve months of 1921 was 2.46, a reduction of more than one-half; and freight revenues for the five months of 1922 was greater than that for the same five months in 1921.

I. C. C. Audits Orient's Books

Six auditors from the Interstate Commerce Commission are making an examination of the books of the Kansas City, Mexico & Orient. The auditing is being done at the request of W. T. Kemper, the receiver of that road, for the purpose of answering charges by the employees that the road has not been operated economically. The Orient must cease operation, its officers assert, unless employees accept voluntary wage cuts and other financial relief is obtained.

Roads Intervene in M. B. & S. Suit

An attack on the foreclosure proceedings brought by the Continental & Commercial Trust & Savings Bank, Chicago, against the Muscatine, Burlington & Southern to collect \$517,000 has been directed against this bank by 23 railroads in an amended petition filed in the District Court at Muscatine, Ia. Various Muscatine attorneys have also joined the railroads in challenging the seniority of the claims of the financial institution.

The railroads, each an intervener in the foreclosure litigation, whose total claims against the Iowa road are believed to aggregate in excess of \$200,000, charge that during the time the indebtedness was incurred the carrier in question and the bank, together with William P. Kopf, as trustee, were the actual owners. In line with this contention, the railroads concerned maintain that the mortgage held by the bank has no precedence over their claims. The trustees, it is asserted in the amended petition, were holders of all the capital stock of the Muscatine, Burlington & Southern and were the owners of the bonds. It is added that they likewise were the equitable owners of the road's obligations. The court is asked to have the bank's claims adjudged inferior to those of the railroads.

Claims Against Government for Fires Occurring Under Federal Control

An investigation is now being conducted by a federal grand jury at Duluth, Minn., to determine the validity of claims amounting to \$2,000,000, filed against the government in connection with losses from forest fires in the Cloquet, Moose Lake, Autumba, Lawler and Kettle river districts of that state, which are said to have been started by sparks from a locomotive in October, 1918, when the railroads were under federal control. These fires resulted in a loss of 400 lives, and property damage of approximately \$40,000,000, on which a number of claims already have been settled.

Legal questions regarding the liability of the individual railroads, their insurance companies, and the government, developed with the filing of the claims. The liability of the government, however, for losses due to the fires was established in an opinion handed down by the Minnesota supreme court on July 22, 1921. The decision directly affected claims of 276 people, all residents of the city of Cloquet, Minn. The claims had been filed against James C. Davis, as agent for the president of the United States under the Transportation Act, and while their claims aggregated but \$1,000,000, other claims indirectly depending upon the outcome of the test cases, aggregated \$35,000,000 to \$40,000,000. The cases were tried first before five St. Louis county judges by stipulation and without jury, to determine the issue of liability. The five judges concluded that the director general's negligence caused the destruction of the property. Subsequently to facilitate carrying the case to a higher court, a district court at Duluth fixed the amount of damage in a specified case. The director general of railroads then moved for a new trial or amended findings, but the motion was denied and the appeal was taken to the supreme court, which sustained the findings of the lower court. Under the act of February 28, 1922, was fixed as the last date on which claims could be filed against the director general: In all, it was estimated nearly 5,000 claims were filed. Suits were filed in St. Louis, Carlton, Aitkin and Pine counties. Non-residents who owned burnt-over timber land were among those who failed to file claims. A corps of claim agents acting for the government, has carried on extensive negotiations with the claimants in settling claims. Under an agreement made in 1921, settlements were made on the basis of 50 per cent of the appraised losses in each case, but they were without power to settle except where suit has been brought. Thousands of the claims have been settled in that way.

Traffic News

The Pennsylvania has inaugurated new 22-hour train service between Chicago and New York in the establishment of the "Gotham Limited," which leaves Union Station, beginning July 16, will leave Chicago at 8:10 p. m. and arrive in New York at 7:10 p. m. the next day.

A sub-committee of the United States Shipping Board has gone west to hold a series of hearings at Chicago, Ill., Portland, Ore., Seattle, Wash., and San Francisco and Los Angeles, Calif., on the question whether or not adequate American flag tonnage facilities exist to warrant the enforcement of section 28 of the merchant marine act. They will be accompanied by an attorney examiner of the Interstate Commerce Commission.

The Chicago & Eastern Illinois has placed in effect round-trip summer tourist fares from Chicago to New York and Boston, via the "Dixie Flyer" to Jacksonville, Fla.; thence to Charleston, S. C., where connection is made with the Clyde Steamship Company for the remainder of the journey to New York. The return trip may be made from New York or Boston by any direct route to Chicago, including rail or steamship service. The tickets are limited to 60 days with the privilege of stop-overs at all points.

Rail Motor Bus on the Northern Pacific

A rail motor bus is to be put in operation on the Fargo & Southwestern branch of the Northern Pacific, to run between Fargo, N. D., and Lisbon, 56 miles. The Northern Pacific has experimented with a motor car on its subsidiary line, the Gilmore & Pittsburgh, but this will be the first car of this sort to run on the Northern Pacific proper. The car was built by the International Motor Truck Company, and has a seating capacity of 40 passengers.

"Message Exchange" at Grand Central Terminal

A "Message Exchange" is the latest innovation in the Grand Central Terminal, New York; a large booth where a clerk will attend to all sorts of passengers' wants, especially requests to send (or receive) a telephone message when the passenger has not time to attend to it himself; and a corps of uniformed attendants, wearing green caps, who are stationed at numerous places throughout the waiting rooms and upper and lower concourses, and perform the same functions. The uniform fee is ten cents. Written messages, telegrams, etc., are forwarded, or received and held to await the addressee. Another innovation is Polk's Information Bureau, adjacent to the regular information bureau, on the upper level. Polk is publisher of directories in various cities and his specialty is hunting up addresses. A city directory placed on a public shelf where everybody can have access to it is a convenience which, at the Grand Central Terminal, is classed as an impossible accomplishment. People who, when in a hurry will tear out a page or two from the book and carry them off, come along too frequently.

To Ascertain Cost of Various Classes of Mail

Fifteen inspectors representing the various inspection divisions and fifteen officers representing the various railway mail service divisions assembled on July 24 at the Post Office Department to secure direct instructions upon the process to be followed by the post offices in securing data upon which to make an ascertainment showing the cost of carrying and handling the different classes of mail matter. The Committee on Cost Ascertainment has charge of the instructions and the 30 inspectors and railway mail service officers gathered in their office. After receiving this instruction, which deals particularly with the weighing and counting of the number of pieces of mail matter of each class, these officers were to return to their districts and give an intensive course at the 61 central accounting offices and at the 50 large post offices of the country, 30 of which, however, are central accounting offices.

They will also superintend the work in the field, which is scheduled to begin September 18 and continue for 30 days in every post office in the United States.

According to the program, the tabulating and compiling of statistics after consolidations have been made in central accounting offices, will be done at the department in Washington by experts. The final and completed report, with the ascertainment of cost, will not be ready for submission to the Joint Commission of Congress on Postal Service by Postmaster General Work before sometime in February or March, 1923. Among other results the findings will show the cost of carrying parcel post packages. It is believed that the Department has been losing heavily on this particular class of mail matter. The last survey of this sort was submitted to Congress by the Post Office Department in 1909. It did not, however, result in any legislation.

The Commission has suspended from July 25 until November 22, the operation of schedules which propose to increase rates applicable on carload traffic, moving between industries on various lines in the Chicago district.

Coal Production

Under the influence of the railway shopmen's strike coal production is rapidly declining, according to the weekly bulletin of the Geological Survey. Traffic congestion has interfered with the placement of empty cars at non-union mines, and the weekly output of coal is already running 1,700,000 tons below the high point reached late in June. Preliminary reports for the week of July 17-22 indicate that production cannot exceed 3,600,000 tons, against a minimum of 3,575,000 tons in the third week of the strike and a maximum of 5,363,000 tons in the twelfth week.

In comparison with normal years the present deficit in production is even more marked. Final returns on the fifteenth week of the strike (July 10-15) show 4,114,000 tons of bituminous coal and 31,000 tons of anthracite, a total for all coal of 4,145,000 tons. In the corresponding week of 1921, the total quantity raised—anthracite and bituminous—was 9,280,000 tons; in 1920 it was 11,500,000 tons. In other words, considering anthracite and bituminous coal as a common source of supply, the present weekly output is from 5,000,000 to 6,000,000 tons below normal.

The trend of production is shown by the cars loaded daily. On Monday railroads reported loading 12,657 cars, a decrease of 2,437 cars below the preceding Monday. By Thursday loadings had dropped to 10,800 cars, the lowest on any Thursday since the strike began. On some days it had been as high as 17,000.

The cause of the decrease is said to have been unmistakably traffic congestion on railroads serving non-union fields. In the Southern West Virginia and Eastern Kentucky from which the bulk of the country's supply during the strike has come, almost every field reported acute transportation disability. In Virginia, Western Kentucky and Tennessee the interruption of car supply was less serious and in Alabama and the Far West increased.

The reports so far received indicate no significant change in the number of men at work. Production in non-union Pennsylvania during first half of the week showed a slight decrease from the week preceding.

The bulletin says that the accumulation of unbilled coal in cars at the mines has now been so far reduced that it no longer constitutes a significant factor in the reserve of coal above ground. The estimated production of bituminous coal from the first of the year to July 15 has been 195,644,000 net tons, as compared with 210,030,000 in the corresponding period of 1921. Cumulative dumpings at the lake ports for the same period now stand at 4,244,095 tons, as compared with 11,907,210 in 1921 and 5,376,150 in 1920 when this movement was so delayed that priority orders were issued to hasten it later in the year.

A new weekly statistical service is inaugurated by the Geological Survey, showing weekly shipments from each of the producing fields. The figures are based on reports furnished by the railroads, giving the number of cars loaded for shipment at the mines on each railroad division.

TOURIST TRAFFIC left in Canada, in 1921 about \$18,000,000, according to J. B. Harkin, National Park Commissioner, in an address before the Canadian Good Roads Association. This was more than twice the sum which had been expended during the year on the parks (which had been one of the attractions drawing the tourists). In 1920, 99,000 American automobiles entered Canada, and in 1921 about 150,000.

Commission and Court News

Interstate Commerce Commission

Records of Time of Employees on Duty and of the Movement of Trains are to be kept by railroads on forms prescribed by the commission in order of May 2, 1921; but by an order issued on July 1, 1922, this requirement does not go into effect until August 30, 1922.

Commission Denies Further Reduction

in Livestock Rates

The Interstate Commerce Commission, in a decision made public on July 21, after further argument on the complaint filed by the National Livestock Shippers' League, et al., has declined to order a further reduction in western livestock rates beyond the reductions made last fall on its recommendation and made permanent in its recent decision in the general rate reduction case. The opinion is by Commissioner Hall. Commissioners McChord, Cox, Potter and Campbell dissented on the ground that the rates should be further reduced. In its decision of last August the commission expressed the view that carriers should reduce by 20 per cent all livestock rates in western territory, except those on horses and mules, which were higher than 50 cents. The carriers made the reduction without an order. Subsequently the complainants, represented by S. H. Cowan and Clifford Thorne, asked that the reduction be extended to rates less than 50 cents, which the commission denied. In the general reduction on agricultural products made by the railroads on January 1 the rates less than 50 cents were reduced 10 per cent, effective for six months and this was made permanent by the general decision.

Commissioner McChord said that far more substantial reductions of all the livestock rates should be made without delay. Commissioner Potter also expressed the opinion that the commission should now make such reductions in livestock rates as would have been made if in addition to making the temporary reductions permanent, it had permitted livestock to share in the general reductions.

State Commissions

The Alabama Public Service Commission on July 11, ordered all railroads operating in Alabama to reduce their passenger fares from 3.6 cents per mile to 3 cents and to sell 1,000-mile books at the rate of 2.12 cents per mile, effective August 15. This order followed an investigation which has been conducted by that body since the first of this year. The commission stated that the railroads have failed to show that a reduction would not stimulate travel in Alabama.

The California Railroad Commission has issued a statement to the effect that it will co-operate to the fullest extent of its ability with the public utility commissions of other states in resisting the efforts of the railroads to increase by ten billion dollars or more the tentative valuations of the roads which were established by the Interstate Commerce Commission for rate making purposes. This announcement was authorized by the state commission, following a conference of the middle-western and western states held at Des Moines, Iowa, on July 6 and 7. "The Esch-Cummins Act," this commission states, "provides that railroad rates must be based on the value of the roads as found by the Interstate Commerce Commission. A tentative estimate of the value of all the railroads in the United States amounts to approximately \$20,000,000,000. It is estimated that if the claims made by the railroads were allowed in full, the valuation tentatively fixed by the Interstate Commerce Commission would be increased by about 50 per cent, or in the neighborhood of ten billion dollars. If 5 per cent is taken as the minimum rate of return, it is apparent that a difference of \$10,000,000,000 in the valuation will mean a difference in railroad and passenger rates of \$500,000,000 a year. These figures show the great importance of these valuation proceedings."

Court News

Passenger Sitting on Steps of Car Negligent

The Massachusetts Supreme Judicial Court holds that a passenger who sits on the step of the platform of a moving car on a steam railroad with his foot extending beyond the line of the car, so that it comes in contact with a signal about six inches from the edge of the lowest step, is negligent, although the cars on the train are crowded, and a submission of the case to the jury is not required, notwithstanding the Massachusetts statute making contributing negligence an affirmative defense.—*Daly v. Boston, R. B. & L. (Mass.), 134 N. E. 376.*

Discriminating Drainage Assessment

In a suit to enjoin excessive drainage assessments the Circuit Court of Appeals, Eighth Circuit, holds that the assessment on a railroad of half the cost of an improvement which would increase land values at least \$250,000, in a district of 12,000 acres, in which the railroad owned only 40.43 acres and 3.61 miles of track, constructed for the most part on high fills and a trestle, and above overflow, was a discrimination so palpable and arbitrary as to amount to a denial of the equal protection of the law.—*Thomas v. K. C. S., 277 Fed. 708.*

Notice of Arrival of Goods, If Duly

Mailed, is "Duly Sent"

The conditions of liability while goods are retained after arrival, as stipulated in the bill of lading, are controlling. A bill of lading, limiting liability to that of warehousemen after notice of arrival, provided that the notice of arrival might be "duly sent or given." The Court of Appeals of District of Columbia holds that "duly sent" means sent in a regular and approved manner, and it is sufficient if notice is deposited in the post office in a stamped and properly addressed envelope, though it is never received.—*Peavy v. P. B. & W., 277 Fed. 333.*

Barred Suit Under Employers' Liability Act

Not Revived by Transportation Act

The Minnesota Supreme Court holds that the provision in the Transportation Act that the period of federal control shall not be computed as part of the period of limitations in actions against interstate carriers on claims arising prior to federal control does not apply to causes of action under the Federal Employers' Liability Act which had become barred by failure to bring suit within the allotted two years, and were not existing rights of action at the date of passage of the Transportation Act.—*Kannell v. Great Northern (Minn.), 186 N. W. 389.*

Delay in Transporting Live Stock

—Reasons Not Good Excuses

The Kansas Supreme Court holds that under the state statute requiring railroads to transport live stock without delay and at a rate of speed averaging 15 miles an hour, unless prevented by unavoidable accident, the following causes given for delay are not excusable: allowing trains to pass; track blocked by trains; waiting for block; taking water and coal; inspecting train; lunch for train crew; waiting for engine; cutting out helper; hot box; sparks from brake shoe; removal of team rod; loading stock for other shippers.—*Anderson v. Hines (Kan.), 203 Pac. 726.*

B. L. Provision Against Liability of Loss from Strikes

A provision in a bill of lading that the carrier shall not be liable for loss or damage "from riots or strikes" is binding upon the shipper. It is, however, held to be incumbent on a carrier setting up a strike as a defense to show that notwithstanding the strike it had used every reasonable effort to preserve the shipper's property, to prevent its being damaged, and to cause it to be transported to its destination. (This question as to where the burden of proof rests, upon the issue of a strike as an excusing condition, is suggested but not decided in *Pennsylvania v. Olivet Bros., 243 U. S. 574, 37 Sup. Ct. 468.*—*American Fruit Distributors v. Hines (Cal. App.), 203 Pac. 821.*

Foreign Railway News

Spanish Railway Electrification

LONDON.

It is reported that the Compania Valencia de Tranvias y Ferrocarriles intends to electrify some of the railway lines it operates, in all amounting to about 45 miles. The headquarters of the company are in the Calle Orilla del Rio, Valencia.

Germany Building Rolling Stock

LONDON.

Germany is making progress in the construction of rolling stock. Already the 150,000 freight cars and the 5,000 locomotives delivered to France by Germany after the armistice have been replaced by new equipment and it is estimated that by August 1, 1922, the German railways will be in exactly the same position as they were at the outbreak of war as regards the quantity of rolling stock and even better off as regards the quality.

Safety of Travel in Russia

LONDON.

A Times (London) correspondent states that from reports published by the statistical department of the Bolshevik Commissariat for Communications, 427 passengers and 526 employees were killed in accidents on the railways of Russia during the year 1921. Moreover, 1,159 employees and passengers were taken from the trains and shot during the same period by order of the Revolutionary Tribunal.

French Railways Measures Against Accidents

LONDON.

M. le Trocquer, Minister of Public Works, recently made a statement on the prospects of French railways. He believes that they have practically recovered from the worst of the difficulties through which they have been passing as a result of the war. "If nothing intervenes to thwart our efforts," he said, "in twenty years from now all the railways south of the Loire will be running by electricity. Over half the area the familiar black smoke will have vanished and we shall be saving nearly 3,000,000 tons of coal. The waterfalls of the Pyrenees, the Alps and the central range will all give their share of 'white coal.'" After careful consideration the minister has chosen a single type of current, 1,500 volts d. c., which will be used exclusively for electrification in France.

With regard to the safety of passengers, M. le Trocquer states that two measures have been taken up which cannot fail of success. The first is that all the French systems will very shortly be provided with audible cab signals, so that a driver can no longer run past the disc without being aware of it. The second is that all passenger cars will be lighted by electricity.

Britain Gets Big Japanese Electrical Order

LONDON.

The Imperial Government Railways of Japan have just placed with The English Electric Company for their Dick-Kerr Works at Preston an order for 34 complete electric locomotives of a total value of upwards of £500,000. This represents the whole requirements of locomotives up to the end of 1923 for those sections of the main line railways which the Japanese government has decided to electrify at once. The order, it is said, was obtained in the face of keen foreign competition, particularly from America.

Eight of the locomotives now ordered are for heavy express passenger service. They are of the 2-C-C-2 (i.e. 4-6-6-4) type. Their weight is approximately 96 (long) tons and they are designed to haul a 415-ton train at a balancing speed of about 60 miles per hour. Each locomotive is equipped with 6 motors, each rated at 306 h.p. at 500 volts, the motors being connected in two groups of three in permanent series on a trolley voltage

ci 1,500 volts. The control equipment is of the standard "English Electric" cam-shaft multiple unit type.

Of the remaining locomotives, nine are for local passenger service and 17 for heavy freight service. These 26 are all of the 4-4 type and will weigh approximately 56 tons each. They are equipped with four motors similar to those on the express passenger locomotives, but in this case the motors will be connected in two pairs in permanent series. Here too the control is the standard "English Electric" multiple unit type. The locomotives for local passenger service are designed to haul a 315-ton train and the freight locomotives a 600-ton train, the balancing speeds being about 55 and 40 miles per hour respectively.

Further Reductions in British Freight Rates

Effective August 1, by agreement between the managements of the railways of England and Wales and shippers, freight rates are to be reduced as follows:

Coal, Coke and Patent Fuel—Increase over pre-war rate to be reduced from 75 per cent to 60 per cent, flat rate from 3d. per to 2d. per ton and maximum addition to remain at 3s. 6d.

Iron Ore, Limestone, etc., for Blast Furnace and Steel Works—Flat rate to be reduced from 3d. per ton to 2d.; percentage increase over pre-war to remain at 50 per cent and maximum addition to remain at 2s.

Manure and Lime for Agriculture—Flat rate to be reduced from 9d. per ton to 4d., percentage increase remaining at 50.

Iron and Steel—Flat rate reduced from 6d. per ton to 4d., percentage increase remaining at 75.

Rolling Stock—Percentage increase to be reduced from 100 per cent to 75 per cent and flat rate from 6d. to 4d. per ton.

Livestock at Carload Rates—Percentage increase reduced from 100 to 75 and flat rates from 2s. per car to 1s.

Livestock at Head Rates—Percentage increase reduced from 100 per cent to 75.

Small Parcels—Percentage increase reduced from 150 per cent to 100 per cent.

Returned Empties—Percentage increase reduced from 100 to 75. Certain other basic commodities bear similar reductions.

Westinghouse Ships Large Order to France

The Westinghouse Electric & Manufacturing Company recently shipped 32 carloads of electrical equipment—transformers and lightning arresters—to the Midi Railway (France). This material weighed over 800 tons and is part of an order totaling over \$1,000,000 for this railway which is pushing its electrification program.

The lines of the Midi Railway are mostly located in the South of France north of the Pyrenees. As far back as 1906 the management of the railways commenced an exhaustive study of the electrification of this part of the system, having in mind the utilization of the water power available on the northern slopes of the Pyrenees. By 1914 four sections had been electrified with single phase current at 12,000 volts and 16.67 cycles, but all work was stopped at the outbreak of the war.

The French early in the war lost practically all their coal fields to the Germans. This more than anything emphasized the necessity of developing the water power resources of the country and electrifying the railroads wherever it could be economically done. Thus on the cessation of hostilities one of the first acts of the government was to send a technical commission abroad to study existing electrified railways.

The commission, after visiting Switzerland, Italy and America, recommended that 1,500 volts, direct current, be adopted as the standard for the electrification of all French railroads, and the Midi Railways Company, in conformity with this decision, immediately resumed the work interrupted by the war on this new basis. The sections already electrified at 12,000 volts will be changed to 1,500 volts direct current, so as to have a uniform system throughout.

Argentine Rate Controversy Not Yet Settled

BUENOS AIRES.

The controversy between the foreign-owned railways with the government over the question of increased rates has not yet been decided. A committee has been appointed by the government to study the rate situation, but, until this body reports, all rates are

to remain at previous levels and the companies have been called upon to refund amounts charged in excess of these levels.

This reimbursement involves many difficulties. In first place, the companies are not at all willing to refund the extra sums collected (which in some instances amount to several million pesos). They must, however, comply with the decision of the public authorities and they seem to have come gradually to the decision to refund 70 per cent of the sums in point. The attitude taken up by the companies in this emergency is not, however, a uniform one, as some of them want to return but 50 per cent, and a few do not consider at all the possibility of a reimbursement.

There are three companies, whose general managers held recently a meeting with a view of adopting a common policy: the Buenos Aires & Pacific, the Southern Argentine and the Western Argentine. The first two companies were inclined to refund 70 per cent and the Western was willing to pay back the full sums in point. They have finally adopted the proposition moved by the Pacific and Southern.

The settlement of this question of reimbursement seems likely to take several months. The railway companies have to deal with opposite forces in the shape of associations like the Cereal Exporters' Association (Centro de Exportadores de Cereales) which in this occasion represents not only the large exporting firms forming the association itself, but also the brokers and the agriculturists of the provinces. The members of the "Centro" referred to have decided not to accept less than 70 per cent from the railways, for their own account as well as for the brokers and the sellers' account. It is to be anticipated, however, that the railways and the cereal exporters will find a satisfactory solution, as their reciprocal interests command a close collaboration with each other.

Railway Ties in China

There are both present and future market possibilities for selling American railway ties in China, according to Trade Commissioner Frank Rhea at Peking. Steel and concrete ties are used, but the demand is mostly for wooden ties. While concrete ties are quite satisfactory where there is a well-ballasted railroad, as is the case with the Canton-Kowloon, which runs through a territory not subject to freezing, and therefore has no heaving of track in the wintertime which would cause breakage of these ties, conclusions are that this tie is entirely too expensive to compete with the wooden tie which is imported into China. On the Canton-Samshui Railway use has been made of a Belgian steel tie, and while this was very expensive it has been reasonably satisfactory, especially as this railway has light traffic and also very light wheel loads. The meter gage Yunnan Railway is all laid with steel ties. The Shantung Railway was originally laid with a German-designed steel tie, but many of these were removed during the Japanese administration and replaced by wooden ties.

Northwestern American and Canadian timber is used very generally and is reported to give better results than either the Japanese or Manchurian timbers. In South China, however, the Australian, Indian, or Philippine hardwoods are said to give better service. This is because the wood resists the attack of the white ants, which are very destructive to railway ties in that section. Humidity also affects the ties in that territory to an extent. Most of North China has light rainfall and most of this during the summertime. This condition probably does not affect the life of railway ties, although the opinion is expressed that in such territory as the western end of the Peking-Suiyuan Railway extending into the Mongolian territory, it would increase the life rather than shorten it.

The usual dimensions for railway ties are 8 ft. by 9 by 6 in. Bridge ties, as a rule, are 10 ft. by 9 by 8 in. There are very few creosoted ties in use in China. The Chinese government railways, such as Peking-Hankow Railway, Tientsin-Pukow Railway, etc., treat their ties in their own creosoting plants. Treated ties will probably be used in the future as they become better known.

Tenders are usually called for by the railways concerned and terms of payment arranged by the railway. Payment is probably the most difficult situation at present, as the Chinese railways will give the business to whoever will give them the longest credit almost regardless of price. American exporters may deal directly with the several railway purchasing departments. A great deal of this business, however, is handled through commission houses. American species are included in official and semiofficial invitations for tenders.

Equipment and Supplies

Locomotives

THE UNION PACIFIC is inquiring for 55 Mountain type and 15 Santa Fe type locomotives.

THE CHICAGO, INDIANAPOLIS & LOUISVILLE is inquiring for 5 Mikado type and 2 Pacific type locomotives.

THE TUCKERTON RAILROAD is having one locomotive repaired at the shops of the Baldwin Locomotive Works.

THE ERIE will have repairs made to 15 locomotives, including Santa Fe and Mikado types at the shops of the Baldwin Locomotive Works.

THE NEW YORK, NEW HAVEN & HARTFORD will have repairs made to 25 locomotives at the shops of the Baldwin Locomotive Works and to 10 locomotives at the shops of the American Locomotive Company.

THE CHESAPEAKE & OHIO will receive bids until 12 o'clock noon July 29, at Richmond, Va., for general repairs to three Mallet compound locomotives. Bids will also be received until 12 o'clock noon August 11 for general repairs to 50 locomotives.

THE NEW YORK CENTRAL announced on Thursday that in anticipation of the motive power requirements of 1923 and to protect the expected traffic needs of the winter in the territory served by the New York Central lines, orders have just been placed for the construction of 150 modern freight locomotives. The locomotives are to be the Mikado type, identical in design with Michigan Central locomotive 8,000, described in the *Railway Age* of July 22. It is understood that the order has been divided equally between the American Locomotive Company and the Lima Locomotive Works, Inc.

Freight Cars

THE NEW YORK CENTRAL is inquiring for 50 King-Lawson air dump cars.

THE LEHIGH & NEW ENGLAND has renewed its inquiry for 100, 50-ton gondola cars.

THE CHICAGO, BURLINGTON & QUINCY, reported in the *Railway Age* of July 22 as inquiring for repairs to 500 box cars, will have these cars repaired at the shops of the Streator Car Company.

THE CHICAGO, BURLINGTON & QUINCY reported in the *Railway Age* of July 22 as inquiring for repairs to 500 box cars and 500 steel gondolas, has placed on order for the latter with the American Car & Foundry Company and is expected to place an order for the box cars this week.

THE ILLINOIS CENTRAL, reported in the *Railway Age* of July 15, as inquiring for 2,000 gondola cars, has ordered 1,000 from the Pullman Company, 500 from the American Car & Foundry Company, 500 from the Mt. Vernon Car Manufacturing Company, 500 from the Bettendorf Company and 500 from the Western Steel Car & Foundry Company.

Passenger Cars

THE WAR DEPARTMENT AIR SERVICE is inquiring for one steel baggage car.

THE NORTHERN PACIFIC has ordered 70 express refrigerator cars from the American Car & Foundry Company.

THE MARYLAND & PENNSYLVANIA has ordered two passenger motor cars and two trailers from the Russell Company, Kenosha, Wis.

THE PITTSBURGH & WEST VIRGINIA is inquiring for 2, 60-ft. steel baggage cars, 1, 70-ft. steel baggage and mail, 1, 70-ft. steel passenger, baggage and mail.

Iron and Steel

THE KANSAS CITY SOUTHERN has placed an order with the McClintic-Marshall Construction Company for 1,900 tons of steel to be used in the construction of a bridge over the Arkansas river at Redlands, Okla.

Track Specialties

THE SOUTHERN PACIFIC is inquiring for 2,500 kegs of spikes.

THE ERIE is inquiring for 5,000 kegs of spikes.

THE MISSOURI, KANSAS & TEXAS is inquiring for 2,500 kegs of standard track spikes.

Miscellaneous

THE NEW YORK CENTRAL will receive bids until October 1 for its requirements of fuel oil, gasoline, kerosene, lubricating oil, grease and tallow candles.

THE NEW YORK CENTRAL will receive bids until 12 o'clock noon, August 3, for structural steel, castings and railings for bridge repairs and non-composite lead paper insulated covered cable.

THE CHICAGO & NORTH WESTERN has placed an order with the Graver Corporation for a Graver type "K" ground-operated water softener to be installed at Boone, Iowa. This plant will have a treating capacity of 23,000 gal. of water per hour.

Signaling

THE CANADIAN NATIONAL has ordered from the Federal Signal Company an electro-mechanical interlocking plant for Smith Falls, Ont.

THE ST. LOUIS-SAN FRANCISCO has ordered from the Federal Signal Company a 28-lever interlocking machine and the necessary materials for the rebuilding of the interlocking plant at Claremore, Okla.

THE NORFOLK & WESTERN has placed an order with the France Manufacturing Company, Cleveland, Ohio, for 470 mechanical type rectifiers, for use in charging storage batteries on the signal system between Phoebe, Va., and Bedford, Norfolk division, and between Lamberts Point, Va., and bridge eight, Norfolk terminal.

THE ATLANTA & WEST POINT has awarded a contract to the Union Switch & Signal Company for the materials for the installation of 16 miles of absolute-permissive block signaling on its main line between LaGrange, Ga., and West Point. These signals will be Style S 3-position, low voltage. Installation will be by railroad forces.

Trade Publications

ARCHITECTS' SPECIFICATION HANDBOOK.—The Truscon Laboratories, Detroit, Mich., have issued a loose-leaf handbook of specifications of 108 pages of 8½ in. by 11 in. size covering the use of Truscon waterproofing and damp-proofing products, floor hardeners, enamels, paints and varnishes. The book is conveniently prepared for ready use by architects and engineers.

ADZING AND BORING CROSS-TIES.—The Century Wood Preserving Company, Pittsburgh, Pa., has issued a large size, 8-page bulletin, illustrated, devoted to the adzing and boring of cross-ties before treatment. The bulletin discusses the advantages of adzing and boring all cross-ties before treatment and shows by text and illustrations, the different methods which can be used. The machinery for this class of work is also described as well as a typical plant layout.

Supply Trade News

The refinancing plan of the **Lima Locomotive Works, Inc.**, as noted in the *Railway Age* of July 1, was adopted by the board of directors and approved at a special meeting of the stockholders in Richmond, Va., on July 14.

The Mid-West Engineering Sales Company, Masonic Temple, Cedar Rapids, Iowa, has been appointed representative in eastern Iowa of the **Conveyors' Corporation of America**, 326 West Madison street, Chicago, for the sale of American trolley carriers.

A. A. Murphy has been appointed resident sales manager of the industrial and railway paint and varnish division of the **E. I. du Pont de Nemours & Co., Inc.**, Wilmington, Del. He will be located at the new office the paint and varnish division has opened at 30 Church street, New York City.

Johns-Manville, Inc., New York, will build a new plant in Canada at Asbestos, Quebec, for the manufacture of asbestos. Work is to be started at once on the plant and is expected to be completed in about six months. The plant will cost over \$1,000,000 and will give employment to about 300 people. The company has taken over the Bennett-Martin mine at Thetford Mines, Que.

A. C. Haberkorn, formerly Detroit branch manager of Manning, Maxwell & Moore, Inc., and the Biggs-Watterson Co., and **E. E. Wood**, former sales manager of the Jones & Lamson Machine Co., have formed a partnership under the name of **Haberkorn & Wood**, with an office and warehouse at 620 E. Hancock avenue, Detroit, Mich., to handle a line of machine tools, cutting oils and compounds, also permanent mould aluminum alloy castings.

F. W. Carter, assistant manager of the heavy traction division, railway department, of the Westinghouse Electric & Manufacturing Company, has resigned to become president

of the **Louisville Frog & Switch Company**, Louisville, Ky. Mr. Carter was graduated in electrical engineering from the Virginia Military Institute in 1912 and in the same year entered the employ of the Westinghouse Company on the graduate student course. Between 1912 and 1916 he filled several important assignments and then took up heavy traction work in the New York office. In 1917 Mr. Carter entered the first Plattsburg Camp and was ordered immediately to France where he served with the

Rainbow division until July 28, 1918, when he was severely wounded in action at Chateau-Thiery and later was honored with the D. S. C. After returning from the service Mr. Carter again entered the railway sales department at East Pittsburgh in charge of heavy traction negotiations. The Louisville Frog & Switch Company, of which Mr. Carter will be president, manufacture manganese frogs, crossings, switches, signals and other railway specialties.

G. A. Blackmore, vice-president of the **Union Switch & Signal Company**, Swissvale, Pa., has been elected first vice-president and general manager. He entered the service of the Union Switch & Signal Company in July, 1896, and in 1901, he was made chief clerk of the engineering and estimating depart-

ment at Swissvale. In July, 1904, he was transferred to New York where he was engaged in work on the Interborough Rapid Transit Subways, the New York terminal of the Pennsylvania Railroad and other large signaling projects. In March, 1909, he was appointed assistant eastern manager with headquarters in New York and in April, 1911, was made eastern manager in charge of the New York, Montreal and Atlanta offices, and of sales and construction. He was appointed general sales manager of the Union Company in 1915, and his headquarters transferred to Swissvale, remaining in this capacity until January, 1917, when he was elected vice-president. He now assumes the additional duties of general manager.

Attorney General Approves Steel Merger

In response to a Senate resolution Attorney General Daugherty has transmitted to the Senate a report stating that in his opinion the merger of the Bethlehem and Lackawanna steel companies and the proposed merger of the Midvale, Republic and Inland companies are not in violation of the Sherman, Clayton or Webb laws and that there is no reason to believe that restraint of trade or monopolistic control will result. He did not express his opinion as to whether they are in violation of the federal trade act. The Federal Trade Commission is conducting an investigation on this point in accordance with the Senate resolution.

Globe Seamless Steel Tubes Company to be Sold

Negotiations are now under way and are expected to be completed soon for the sale of the **Globe Seamless Steel Tubes Company**, Milwaukee, Wis., manufacturers of stationary boilers and of steel tubes for use in locomotives. This company has been owned principally by W. Renshaw, Chicago, president, and L. Fitch, Milwaukee, vice-president and secretary, both of whom will retire. The new interests will be headed by R. P. Lamont, president of the **American Steel Foundries**, Chicago; P. J. Kalman, president of the **P. J. Kalman Company**, St. Paul, Minn., of the **Bliss & Laughlin, Inc.**, Harvey, Ill., and of the **Hudson Motor Company** of Illinois; and by F. J. O'Brien, vice-president and general manager of the **Globe Seamless Steel Tubes Company**, who will continue in active charge of that business. The company at present maintains sales offices in New York, Chicago, Detroit, Mich., Atlanta, Ga.; Houston, Tex.; Portland, Ore; and San Francisco.

The Consolidated Machine Tool

Corporation of America

The **Consolidated Machine Tool Corporation of America**, with general offices at 17 East Forty-second street, New York City, is a consolidation of the **Betts Machine Company**, Rochester, N. Y.; **Ingle Machine Company**, Rochester, N. Y.; **Hilles & Jones Company**, Wilmington, Del.; **Modern Tool Company**, Erie, Pa.; the **Newton Machine Tool Works, Inc.**, Philadelphia, Pa.; the **Colburn Machine Tool Company**, Cleveland, Ohio, and the **Dale Machinery Company, Inc.**, New York City and Chicago, Ill. The company's capital stock includes \$10,000,000 preferred stock of \$100.00 par value and 200,000 shares of common stock with no par value.

W. H. Marshall, formerly president of the **American Locomotive Company**, is chairman of the board of directors of the new company and C. K. Lassiter, formerly vice-president of the **American Locomotive Company** in charge of operations, is president of the new company. H. J. Bailey, H. W. Breckenridge, H. W. Champion, J. J. Dale and A. H. Ingle are vice-presidents; O. D. Miller, treasurer; and R. R. Lassiter, secretary. The directors include W. H. Marshall, C. K. Lassiter, H. J. Bailey, formerly president **Hilles & Jones Company**, B. J. Baker of **B. J. Baker & Company**, bankers, H. W. Breckenridge, formerly vice-president of the **Colburn Machine Tool Company**, Lawrence Chamberlain, president of **Lawrence Chamberlain & Co.**, bankers; H. W. Champion, formerly president of the **Newton Machine Tool Works, Inc.**; J. J. Dale, president of the **Dale Machinery Company**; T. Allen Hilles, A. H. Ingle, formerly president of the **Betts Machine Company** and **Ingle Machine Company**, and F. D. Payne, formerly manager of **Modern Tool Company**.



F. W. Carter

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company has awarded a contract to the Bates & Rogers Construction Co., Chicago, for the construction of a 38-mile cut off between Ellinor, Kan., and Eldorado. A belt line also will be constructed around the city of Eldorado, which, with other trackage, will total 5½ miles additional. The project will shorten the present route by 13.65 miles. The estimated cost is \$3,046,000.

ATCHISON, TOPEKA & SANTA FE.—This company has applied to the Interstate Commerce Commission for authority for the construction of two branches, one from a point 1.7 miles south of Burbank, Okla., 6.24 miles in a northeasterly direction, and one from Denoya, Okla., east 2.97 miles.

BOARD OF PUBLIC WORKS of the city and county of San Francisco, Cal., opened bids on July 26, for the construction of a plate girder bridge at Six-bit gulch; for the construction of abutments and piers for this bridge, and for the grading of a roadway involved in the relocation of tracks, all on the Hetch Hetchy railroad.

CHICAGO, BURLINGTON & QUINCY.—This company, which was reported in the *Railway Age* of July 8, page 86, as calling for bids for the construction of a two-story brick addition to its freight house at Burlington, Iowa., has awarded the contract for this work to the T. S. Leake Construction Company, Chicago.

ILLINOIS CENTRAL.—This company has awarded a contract to the Fred R. Jones Company, Cleveland, Ohio, for the laying of approximately three miles of spur tracks in Louisville, Ky., to connect with the Standard Oil Company properties in that city, the work to cost approximately \$100,000. This same company has awarded a contract to the Merrill Road Improvement Company, Vicksburg, Miss., for raising the grade and paving freight house approaches at Vicksburg, Miss., at an estimated cost of \$25,000.

MAGMA ARIZONA.—This company has awarded a contract to Twohy Brothers, Phoenix, Ariz., for improvements on its line to include extensive grade revision work and the re-laying of 35 miles of track.

MISSOURI PACIFIC.—This company has awarded a contract to the T. S. Leake Construction Company, Chicago, for the construction of a car repair shed at Sedalia, Mo., to cost approximately \$25,000.

PENNSYLVANIA.—This company is receiving bids for the construction of an overhead bridge at Leaman Place, Pa. The approximate quantities are as follows: 1,200 cu. yd. foundation excavation; 2,200 cu. yd. foundation and abutment masonry; 250 cu. yd. concrete bridge floor including reinforcement; and 375 sq. yd. paving on bridge. The work will be in charge of D. P. Pugh, assistant engineer, Norristown, Pa.

WABASH.—This company, which was reported in the *Railway Age* of March 4 as having been ordered by the Missouri Public Service Commission to construct a new freight station and to remodel its present passenger station, at Kirksville, Mo., has awarded a contract for this work to the T. S. Leake Construction Company, Chicago.

THE PANAMA LIMITED, which is operated between Chicago and New Orleans, La., as the Illinois Central's de luxe train, has completed one of the best "on time" records in its history. During the 12 months ending May 31 this train arrived in Chicago on time every day, while southbound, it arrived in New Orleans on time 361 days out of the year. The suburban trains of the Illinois Central to and from Chicago have been 99 per cent on time for the same period. This service runs 370 trains to handle an average of about 75,000 passengers a day. Approximately 60,000 of these passengers are carried during the morning and evening rush periods on their way to and from work.

Railway Financial News

BOSTON & MAINE.—*Injunction Petition Denied.*—Justice Crosby, of the Superior Court at Boston, Mass., has denied the petition of Edmund C. Codman for an injunction to restrain directors of the Boston & Maine and the New York Central, as operators of the Boston & Albany, from carrying out an alleged scheme to obtain "illegal control over the Boston & Maine."

CANADIAN NATIONAL RAILWAYS.—*Directors Resign.*—President D. B. Hanna on July 21 gave out the following statement:

At a meeting of the board of directors of the Canadian National Railways, held yesterday, the members of that board tendered their resignations to the government.

These resignations are preliminary to the appointment of the single board of directors which will succeed the separate boards of the Canadian National Railways and the Grand Trunk Railway. This will afford the government a free hand in the selection of the new directors.

Such selection may not be completed immediately, but in the meantime the interest of the Government Railways will not suffer, as the present directors will continue to act until their resignations have been formally accepted.

CAROLINA, CLINCHFIELD & OHIO.—*Annual Report.*—The income account for the year ended December 31, 1921, compares as follows:

	1921	1920
Operating revenues.....	\$7,464,112	\$6,524,755
Operating expenses.....	5,320,170	4,982,121
Net operating revenues.....	2,143,942	1,542,634
Taxes.....	440,000	365,000
Railway operating income.....	1,702,140	1,176,868
Net railway operating income.....	2,492,298	2,318,716
Total non-operating income.....	116,247	481,275
Gross income.....	2,608,545	2,799,991
Interest on funded debt.....	1,187,582	1,187,904
Total deductions.....	1,622,117	1,914,767
Net income (exclusive of interest on income debentures).....	986,428	.....
Interest on income debentures.....	262,820	.....
Net income.....	723,608	885,224

*Includes corporate expenses for January and February, and covers ten months' operations, March 1 to December 31, 1920.

CHOWCHILLA PACIFIC.—*Asks Authority to Sell Property.*—This company has asked permission of the Railroad Commission of California to sell its entire property to Frank G. Drum for an agreed price of \$730,000. This road extends from Chowchilla, Cal., a station on the Southern Pacific, to Dairyland, a distance of about 10 miles.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—*Call for Deposit of Stock.*—The protective committee for the preferred stock has issued a call for the deposit of the stock with the committee. The letter sent to the stockholders was occasioned by the recent ruling of the Interstate Commerce Commission approving the offer by the New York Central to change its stock on equal terms for the preferred stock of the Cleveland, Cincinnati, Chicago & St. Louis. The committee opposes the exchange, contrasting the earnings of the Cleveland, Cincinnati, Chicago & St. Louis available for preferred stock with the earnings of the New York Central available for dividends, and comparing the assets of the two roads. It is asserted also that by acquiring the majority of Cleveland, Cincinnati, Chicago & St. Louis preferred stock the New York Central would be able to control the issue of bonded debt and negotiation of leases involving an increase in fixed charges.

The protective committee is headed by Edwin G. Merrill, president of the New York Life Insurance and Trust Company, and includes George E. Roosevelt of Roosevelt & Son, and Willis D. Wood of Ladd & Wood, New York.

COLORADO & SOUTHERN.—*Annual Report.*—This company's annual report for 1921 is reviewed in an article on another page of this issue entitled "Colorado & Southern Assisted by Coal Strike." See also excerpts from annual report on adjacent pages.

DENVER & RIO GRANDE WESTERN.—*Receivership.*—Joseph H. Young, president of the Denver & Rio Grande Western, was appointed receiver for the road in the Federal District Court at Denver, Colo., on July 21. The receiver was petitioned by the New York Trust Company and the Bankers Trust Company of New York, trustees for holders of defaulted mortgage bonds.

Richard Sutro, chairman of the committee of the adjustment

mortgage 7 per cent bondholders of the Denver & Rio Grande, in commenting on the appointment of a receiver said:

Application for a receiver made by New York Trust Company as trustee under adjustment mortgage came as the result of many months of efforts and negotiations between our committee and its counsel and trustee and its counsel. Our committee concluded that interests of the property and of all bondholders would best be served by a receivership.

Adjustment bondholders have substantial interest in the treatment which is accorded the refunding bonds. Among other things \$7,005,000 refunding bonds are pledged as collateral under adjustment mortgage and there are in addition about \$31,000,000 refunding bonds outstanding. Interest of adjustment bonds in refunding bond situation is a large one and as important as the interest represented by any committee. Adjustment bonds are entitled to protection and standing accordingly.

The Bankers Trust Company, with whom we have been in conference concerning this matter, as trustee for refunding bondholders, also appeared and supported the application for a receiver.

Interest has been unpaid on the adjustment bonds since April 1, 1921, and on refunding bonds since August 1, 1921.

Now that the court has taken the property under its protection, the committee of which I am chairman, feels that earnings will be available for rehabilitation of the road and eventually for interest, instead of being received by an alleged owner (new Denver & Rio Grande Railroad) which claims not to be liable for payment of principal and interest of any of the bonds upon the roads.

We accordingly look confidently to eventual readjustment whereby the bondholders will secure equitable treatment.

Alvin W. Krech, president of the Equitable Trust Company, and chairman of the Western Pacific, which bought the old Denver & Rio Grande, said that he had no idea of what would be done with the property following the naming of a receiver. The offer to bondholders, he said, of a plan of reorganization was rejected through their failure to deposit a sufficient number of bonds. As far as the Western Pacific is concerned, Mr. Krech declared, the offer will probably be withdrawn.

EL DORADO & SANTA FE.—*Authorized to Construct New Lines and Issue Stock.*—The Interstate Commerce Commission has issued a certificate authorizing this company to construct three new lines totalling 43½ miles connecting with the Atchison, Topeka & Santa Fe in Chase and Butler counties, Kan., and has also authorized the company to issue \$50,000 of stock. The Atchison, Topeka & Santa Fe was also authorized to acquire control of the company by purchase of its stock and by lease.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Annual Report.*—The income account for the year ended December 31, 1921, compares as follows:

	1921	1920
Miles operated	89	89
Operating revenues	\$1,355,659	\$1,431,562
Operating expenses	865,245	920,880
Net from railway operations	490,415	510,683
Railway tax accruals	71,065	53,896
Operating income	430,919	462,478
Gross income	484,269	503,903
Deductions from gross income	383,147	392,327
Net income	101,122	111,576
Dividends on preferred stock	30,000	30,000
Balance to profit and loss	71,122	81,576

GRAND TRUNK.—*Directors Resign.*—Sir Joseph Flavelle, chairman of the board, president H. G. Kelly and A. J. Mitchell have resigned, and the resignations of J. N. Dupuis and E. L. Newcombe, K. C., are expected.

The resignation of the directors of the Grand Trunk, like those of the Canadian National directors do not take effect immediately. The purpose of the resignations is to give the Minister of Railways a free hand in the selection of the new board.

GREAT NORTHERN.—*Annual Report.*—This company's annual report for 1921 is reviewed in an article on another page of this issue entitled "Great Northern Ore Traffic Will Help 1922 Net." See also excerpts from annual report on adjacent pages.

NEW YORK CENTRAL.—*Authorized to Acquire Control.*—The Interstate Commerce Commission has authorized the acquisition of control of the Toledo & Ohio Central and the Kanawha & Michigan and their leased properties, by lease, on condition that none of the lessees shall dispose of any of the stock of the lessor now owned by it without the approval of the commission.

NEW YORK CENTRAL.—*Exchange of Stock Opposed.*—See Cleveland, Cincinnati, Chicago & St. Louis.

PITTSBURGH, CINCINNATI, CHICAGO & ST. LOUIS.—*Dividend Declared.*—The directors at a special meeting on Wednesday declared a dividend on the company's capital stock covering the period from January, 1921, to July, 1922, at the rate of 4 per cent per annum, being in the aggregate 6 per cent for the period.

The dividend is payable August 15, to stock of record August 7, out of rental to be received by the Pittsburgh, Cincinnati, Chicago & St. Louis from the Pennsylvania Railroad Company under the terms of the lease of its railroad property.

TENNESSEE CENTRAL.—*Authorized to Issue Securities.*—The Interstate Commerce Commission has authorized an issue of \$3,000,000 of common stock in respect of the purchase price of the Tennessee Central Railroad, \$1,700,000 of which is to be acquired and pledged as security for a loan of \$563,000 from the government, also an issue of \$1,500,000 of first mortgage 6 per cent gold bonds in respect of the purchase price, \$850,000 to be acquired and pledged as further security for the loan, and \$563,000 also to be pledged with the Secretary of the Treasury. The company is also authorized to assume liability in respect of \$850,000 of promissory notes given by the stock and bond subscribers in respect of the purchase price, also to be deposited as security for the loan, and to assume obligation in respect of \$210,000 of equipment trust certificates.

TENNESSEE CENTRAL.—*Mortgaged.*—This company has mortgaged all its properties to the American Trust Company, of Nashville, Tenn., for \$3,000,000.

TOLEDO & OHIO CENTRAL.—*Annual Report.*—The income account for the year ended December 31, 1921, compares as follows:

	1921	*1920
Miles operated	504	503
Operating revenues	\$10,711,986	.....
Operating expenses	8,425,297	.....
Net from railway operations	2,286,689	.....
Railway tax accruals	693,590	.....
Railway operating income	1,591,223	.....
Net railway operating income	1,858,993	A \$2,193,342
Total other income	371,112	663,041
Gross income	2,230,105	2,856,383
Interest on funded debt	1,247,276	1,246,838
Total deductions from gross income	1,571,236	1,615,390
Surplus for the year	658,869	1,240,993

*Items not shown are not comparable. See note A.

A Includes compensation for January and February, guarantee, March to August and net railway operating income—corporate—September to December.

ULSTER & DELAWARE.—*Annual Report.*—The income account for the year ended December 31, 1921, compares as follows:

	1921	1920
Mileage operated	129	129
Operating revenues	\$1,747,687	\$1,324,180
Operating expenses	1,379,815	1,745,831
Net from railway operations	367,872	Def. 421,651
Railway tax accruals	82,659	59,576
Total operating income	285,214	Def. 481,177
Total non-operating income	Def. 32,192	690,538
Gross income	253,021	209,361
Interest on funded debt	140,000	140,000
Total deductions	247,295	225,709
Net corporate income	5,727	Def. 16,348

WASHINGTON, BRANDYWINE & POINT LOOKOUT.—*Authorized to Issue Stock.*—This company has been authorized by the Interstate Commerce Commission to issue \$431,400 of stock for the purpose of continuing the construction of its line from Mechanicsville to Point Lookout, Md.

Railroad Administration Settlements

The United States Railroad Administration reports the following final settlements and has paid out to the several roads the following amounts:

Missouri, Kansas & Texas	.....	\$5,000,000
Wichita Falls & Northwestern	.....	3,500
Union Passenger Depot Company of Galveston	.....	35,000
Northern Pacific Terminal Company of Oregon	.....	26,500
Salina Northern	.....	3,500

Dividends Declared

Buffalo, Rochester & Pittsburgh.—Common, \$2.00, semi-annually; preferred, \$3.00, semi-annually; both payable August 15 to holders of record August 5.

Illinois Central.—Preferred, \$1.10, quarterly, payable September 1 to holders of record August 4. Common, 1 1/4 per cent, quarterly, payable September 1 to holders of record August 4.

Pennsylvania.—\$50, quarterly, payable August 31 to holders of record August 1.

Pittsburgh, Cincinnati, Chicago & St. Louis.—4 per cent, payable August 15 to holders of record August 7.

Trend of Railway Stock and Bonds Prices

	July 25	Last Week	Last Year
Average price of 20 representative railway stocks	67.23	67.65	56.34
Average price of 20 representative railway bonds	87.82	87.78	74.10

Annual Reports

Colorado & Southern Railway Company—Twenty-third Annual Report

CHICAGO, January 2, 1922.

To the Stockholders of The Colorado and Southern Railway Company:
Herewith is submitted the Twenty-third Annual Report of your Board of Directors for the year ended December 31, 1921, setting forth comparative statements for the fiscal period of The Colorado and Southern Railway Company, Fort Worth and Denver City Railway Company and The Wichita Valley Railway Company.

THE COLORADO AND SOUTHERN RAILWAY COMPANY

Comparative Statement of Corporate Income, Years Ended December, 31

	1921	1920	
..... Standard Return.....	\$413,535.30†	\$252,896.89	NON-OPERATING INCOME
RAILWAY OPERATING REVENUES.		\$3,687,886.51 Equipment rents (Net)..... Dr. \$240,176.18*
..... Freight.....	\$10,212,960.99*	..... Joint facility rents (Net)..... Dr. 2,921.24*
..... Passenger.....	2,656,946.46*	..... Miscellaneous rents..... 11,708.49
..... Mail.....	136,820.29*	..... Dividends and miscellaneous interest..... 106,990.42
..... Express.....	235,162.17*	..... †Miscellaneous income..... 538,000.04‡
..... All other transportation.....	319,228.16*	(Estimated amount due under Guaranty, Transportation Act, 1920)..... 1,113,733.12	
..... Incidental.....	228,111.58*	..... Total non-operating income..... \$1,527,334.65
..... Joint facility.....	27,511.22*	..... Gross income..... \$2,319,609.94
..... Total railway operating revenues.....	\$13,816,740.87*	DEDUCTIONS FROM GROSS INCOME	
RAILWAY OPERATING EXPENSES.		\$696,340.80 Miscellaneous rents..... \$18,843.50
..... Maintenance of way and structures.....	\$2,376,876.44*	..... Interest on funded debts..... 544,511.29
..... Maintenance of equipment.....	3,168,450.11*	..... Interest on unfunded debt..... 19,003.92
..... Traffic.....	125,689.84*	..... Amortization of discount on funded debt..... 2,755.58
..... Transportation.....	5,020,565.67*	..... †Miscellaneous income charges..... 258,445.53‡
..... Miscellaneous operations.....	113,642.70*	..... Total deductions from gross income..... \$843,559.82
..... General.....	541,574.34*	..... Net income..... \$1,476,050.12
Cr. Transportation for investment—Cr. Cr.	3,899.65*	DISPOSITION OF NET INCOME.	
..... Total railway operating expenses.....	\$11,343,898.95*	..... Dividends..... \$639,152.32
..... Net.....	\$2,887,377.22*	..... Total appropriations of income..... \$639,152.32
..... Railway tax accruals.....	\$784,224.89§	Income balance transferred to profit and loss..... \$836,897.80	
..... Uncollectible railway revenues.....	3,159.60*		
Railway operating income (includes two months of standard return of 1920)	\$2,099,992.73*		
NON-OPERATING INCOME.	\$150,978.36*		
..... Equipment rents (Net).....	\$150,978.36*		
Dr. Joint facility rents (Net)..... Dr.	33,268.51*		
..... Miscellaneous rents.....	59,462.00		
1,923,140.37	1,352,530.15		
1,779.44	509,161.76‡		
..... †Dr. Miscellaneous income.....	959,687.98		
(Estimated amount due under Guaranty, Transportation Act, 1920).....			
..... Total non-operating income.....	\$2,998,551.74		
Gross income.....	\$5,098,544.47		
DEDUCTIONS FROM GROSS INCOME		\$1,723,110.33	
..... Miscellaneous rents.....	\$112,398.06		
..... Interest on funded debt.....	2,140,438.47		
..... Interest on unfunded debt.....	1,988.88		
..... Amortization of discount on funded debt.....	13,573.93		
..... †Miscellaneous income charges.....	224,078.83‡		
..... Total deductions from gross income.....	\$2,492,478.17		
..... Net income.....	\$2,606,066.30		
DISPOSITION OF NET INCOME			
..... Dividends.....	\$680,000.00		
..... Total appropriations of income.....	\$680,000.00		
Income balance transferred to profit and loss	\$1,926,066.30		

FORT WORTH AND DENVER CITY RAILWAY COMPANY

Comparative Statement of Corporate Income, Years Ended December 31

	1921	1920	
..... Standard return.....	\$315,231.08†	\$554,650.33	NON-OPERATING INCOME.
RAILWAY OPERATING REVENUES		\$155,429.72	Dr. Equipment rents (Net)..... Dr. \$169,755.42*
..... Freight.....	\$7,175,940.38*	15,183.45 Joint facility rents (Net)..... 8,433.00*
..... Passenger.....	3,457,155.07*	2,584.21 Miscellaneous rents..... 3,345.89
..... Mail.....	134,023.17*	7,036.65 Dividends and miscellaneous interest..... 4,389.48
..... Express.....	151,697.28*	4,508.45 †Miscellaneous income..... 132,673.03‡
..... All other transportation.....	103,563.70*	..... (Estimated amount due under Guaranty, Transportation Act, 1920)..... 270,738.12
..... Incidental.....	174,157.19*	..... Total non-operating income..... \$249,824.10
..... Joint facility.....	348.12*	..... Gross income..... \$404,982.65
..... Total railway operating revenues.....	\$11,196,884.91*	DEDUCTIONS FROM GROSS INCOME	
RAILWAY OPERATING EXPENSES.		\$428,533.37 Miscellaneous rents..... \$203,392.80
..... Maintenance of way and structures.....	\$1,863,733.33*	..... Interest on funded debt..... 38,450.00
..... Maintenance of equipment.....	2,667,990.15*	..... Interest on unfunded debt..... 19,753.53‡
..... Traffic.....	90,521.65*	..... Total deductions from gross income..... \$261,596.33
..... Transportation.....	5,310,743.20*	Income balance transferred to profit and loss..... \$143,386.32	
..... Miscellaneous operations.....	82,048.82*		
..... General.....	385,483.06*		
Cr. Transportation for investment—Cr. Cr.	16,902.70*		
..... Total railway operating expenses.....	\$10,383,617.51*		
..... Net.....	\$1,128,498.48*		
..... Railway tax accruals.....	\$333,160.75§		
..... Uncollectible railway revenues.....	3,062.44*		
Railway operating income (includes two months of standard return of 1920)...	\$792,275.29*		

†January and February, 1920.

*Ten months. §Ten months except war taxes which are included for twelve months.

†Includes "Lap over" items credited and charged by Federal Administration.

[ADVERTISEMENT]

Thirty-Third Report of the Great Northern Railway Company

To the Stockholders:

The Board of Directors submits the following report for the year ended December 31, 1921.

CAPITAL STOCK

There has been no change during the year in the authorized share capital, same remaining at \$250,000,000, of which there had been issued to December 31, 1921, \$249,478,250.00.

FUNDED DEBT.

There has been an increase of \$7,319,500 in the bonded indebtedness of the Company in the hands of the public, made up as follows:

By issue of the Company's General Mortgage 7 per cent. Gold Bonds, Series "A," dated July 1, 1921, maturing July 1, 1936.....	\$115,000,000.00
Less—	
N. P. G. N., C. B. & Q. Collateral 4 per cent joint bonds, matured and paid July 1, 1921, \$215,227,000, G. N. Ry. Co.'s proportion one-half	\$107,613,500.00
St. P. M. & M. Ry. Co. Consolidated Mortgage bonds redeemed through the operation of the Sinking Fund.....	67,000.00
Net increase.....	107,680,500.00
	\$7,319,500.00

Under date of March 31, 1921, the Chicago, Burlington & Quincy Railroad Company made distribution of a stock dividend of 600,000 shares of par value of \$100 each. The dividend upon the stock pledged under the Trust Indenture securing N. P. G. N., C. B. & Q. Collateral 4 per cent joint bonds, aggregated \$82,539 shares which were issued to the Guaranty Trust Company, Trustee under the joint indenture, increasing the security thereunder to 1,658,674 shares, of which one-half is owned by the Great Northern Railway Company, and one-half by the Northern Pacific Railway Company.

In order to secure funds with which to pay off and discharge the above described joint bonds, the Board of Directors of this Company at meeting held March 22, 1921, authorized the execution, with the Northern Pacific Railway Company, of a joint indenture to be dated July 1, 1921, for the issue of \$230,000,000 in bonds to be known as Northern Pacific-Great Northern Joint 15-Year 6½ per cent Convertible Gold Bonds, dated July 1, 1921, maturing July 1, 1936, and secured by deposit with The First National Bank of the City of New York as Trustee under the joint indenture, 1,658,674 shares of the capital stock of the Chicago, Burlington & Quincy Railroad Company; \$33,000,000 Northern Pacific Railway Company Refunding and Improvement 6 per cent. Mortgage Bonds, Series "B," maturing July 1, 2047; and \$33,000,000 Great Northern Railway Company General Mortgage 7 per cent. Gold Bonds, Series "A," maturing July 1, 1936, the joint bonds being convertible, par for par, into bonds of the respective Railway Companies to the amount of \$115,000,000 each. The indenture provides for the release of the above security upon a pro rata basis upon conversion of the joint bonds into the bonds of either of the Railway Companies. The Interstate Commerce Commission approved this plan on April 21, 1921.

The entire issue of the joint 6½ per cent. bonds was subscribed for by a syndicate represented by J. P. Morgan & Company and The First National Bank of the City of New York at price of 91½ per cent. and payment made therefor on May 16, 1921.

The amount required to pay and discharge the joint 4 per cent. bonds on July 1, 1921, aggregating \$215,227,000, was obtained as follows:

From sale of the joint 6½ per cent. bonds, \$230,000,000 at 91½ per cent..... \$210,450,000.00

Less expenses covering fees, taxes, printing, authentication, etc., to Dec. 31, 1921..... 335,963.27

Net proceeds..... \$210,114,036.73

Provided by the railway companies from other sources..... 5,112,963.27

Total..... \$215,227,000.00

The conversions of joint 6½ per cent. gold bonds during the period May 15, 1921, to December 31, 1921, were as follows:

Into Great Northern Ry. Co. General Mortgage 7 per cent. Gold Bonds, Series "A"..... \$115,000,000.00

Into Northern Pacific Ry. Co. Refunding and Improvement 6 per cent. Bonds, Series "B"..... 9,950,400.00

Unconverted December 31, 1921 (N. P. Ry. Co. proportion)..... 105,049,600.00

Total..... \$230,000,000.00

The burden of interest to the Great Northern Railway Company in the issue of its 7 per cent. bonds by way of conversion as against the interest on the Northern Pacific Railway Company's proportion of the joint debt whether represented by the remaining joint 6½ per cent. or by the 6 per cent. bonds issued or which may be issued by the Northern Pacific Railway Company by way of conversion is claimed by the Great Northern Railway Company to be subject to equalization as a part of the cost of the joint financing. The Northern Pacific Railway Company opposes this claim and matter has been submitted to arbitration.

In order to have a more comprehensive and satisfactory mortgage to secure the issue of the series of 7 per cent. bonds above referred to, and also to secure the issue of other bonds for the purpose of future enlargement, improvement, extension, and equipment of the Company's properties, the Company executed and delivered to The First National Bank of the City of New York as Trustee, its mortgage dated January 1, 1921, to secure the issue of its General Mortgage Bonds.

The indenture provides for the issue of bonds in series dated July 1, 1921, maturing on dates subsequent to June 30, 1936, and on or prior to July 1, 2121, with interest rates, and such special provisions as the Board of Directors or the Executive Committee shall determine, and limited in amount, including bonds reserved to retire prior debt, to three times the then outstanding capital stock of the Company. Provision was made for the closing of the Company's First and Refunding Gold Bond Mortgage at \$72,000,000, of which \$35,668,000 are in the hands of the public, and \$36,332,000 pledged under the indenture. Provision was also made for the issue at once of \$140,000,000, Series "A," 7 per cent. bonds, dated July 1, 1921, and maturing July 1, 1936, of which \$33,000,000 were pledged under N. P. G. N. Joint 15-Year Convertible Gold Bond Mortgage, and \$107,000,000 held for conversion purposes, and in case of same being so used that the Chicago, Burlington & Quincy Railroad Company stock released from the lien of the joint indenture as result of such conversion should be pledged with the Trustee of this indenture.

By the conversion of \$115,000,000 of the joint 6½ per cent. bonds into General Mortgage Gold Bonds of this Company there were released from the

lien of the joint indenture 829,337 shares of stock of the Chicago, Burlington & Quincy Railroad Company, which were immediately pledged with the Trustees of the indenture of January 1, 1921, and \$33,000,000 of this Company's General Mortgage 7 per cent. Gold Bonds, of which \$8,000,000 (together with the \$107,000,000 mentioned above) have been used in conversion and \$25,000,000 placed in the Treasury of the Company for use as collateral or for sale.

GENERAL

The Interstate Commerce Commission approved the Company's plan for financing the purchase of five hundred 40-ton refrigerator cars, one steam dumper and one convertible pile driver and crane at an estimated cost of \$1,172,320, one-half of which amount was to be secured from the United States Government under Section 210 of the Transportation Act, 1920, the balance to be obtained from other sources. The loan of \$586,000 received from the Government is evidenced by fourteen notes of \$39,000 each, maturing annually beginning September 1, 1922, and ending September 1, 1935, and one note for \$40,000 maturing September 1, 1936, bearing interest at the rate of six per cent. per annum payable semi-annually. This loan is secured by the deposit with the Treasury Department of the United States of \$750,000, par value, Great Northern Railway Company General Mortgage 7 per cent. Gold Bonds. The balance of the funds required was procured by the issue of the Company's 6½ per cent. Equipment Gold Notes, Series "A," dated August 1, 1921, in the principal sum of \$606,000, payable in six annual installments of \$101,000 each, beginning August 1, 1926, and ending August 1, 1931. These notes were sold at 97½ per cent., the Company realizing \$590,850.

The details of expenditures for Equipment are given in the report of the President.

There was expended for Investment in road, the sum of \$2,971,489.14 of which \$2,965,810.05 was for Additions and Betterments, and \$5,679.09 for Improvements on leased railway property.

The records of the Pension Department show the following:

Number of pensioners December 31, 1920.....	120
Employees added to roll during the year.....	40
Pensioners died during the year.....	16
Number of pensioners December 31, 1921.....	144
Pensions paid during the year.....	\$49,683.04
Pensions paid September 16, 1916, to December 31, 1921.....	166,854.91

Work was continued during the year in connection with Federal Valuation of this Company's property. Conferences on the tentative land and accounting reports were held by the Company with the Interstate Commerce Commission and many differences adjusted. It is expected that the Company will shortly receive revised engineering, land and accounting reports to be followed by the tentative valuation. This tentative valuation will then become the subject of hearings before the Commission and its examiners. Data are being compiled for use in such hearings, and every possible effort is being made to see that the final values when determined shall be just and fair.

As stated in last year's report, the Company filed with the Interstate Commerce Commission its claim for deficit due under the guaranty provisions of the Transportation Act, 1920, and had received as partial payment thereon \$12,500,000. It is expected that a final settlement with the Government will be effected during the current year.

An additional amount of \$91,054.40 has been received from the Director General due to the revision of the annual rental, as mentioned in last year's report.

The Board respectfully calls the attention of the Stockholders to the reports of the President, of the Comptroller, with customary balance sheet and statistical tables, and of the Land Commissioner.

For the Board of Directors.

LOUIS W. HILL, Chairman.

April 30, 1922.

REPORT OF PRESIDENT.

To the Board of Directors:

Herewith report for the fiscal year ended December 31, 1921:

REVENUES, OPERATING EXPENSES, VOLUME OF TRAFFIC, ETC.

Gross Operating Revenues for the year were \$101,317,203.81, a decrease of \$21,280,661.40, or 17,358.1 per cent. as compared with last year, while the decrease in Operating Expenses was 29.3559 per cent. The various amounts making the increases and decreases and the percentage for each, as compared with last year, are as follows:

	Increase or decrease
Revenue from transportation	
Freight	Decrease \$15,060,604.56 16,7786
Passenger	Decrease \$4,090,745.58 19,9053
Mail	Decrease 320,789.05 10,0948
Express	Decrease 538,356.60 17,9544
Sleeping car, Parlor and chair car, Excess baggage, and other passenger-train revenue	Increase 23,111.65 1.6276
Total Passenger service train revenue	Decrease \$4,926,779.58 17,5036
Switching, Special service train, and Other freight-train revenue.....	Decrease 143,537.83 17,9439
Total revenue from transportation.	Decrease \$20,130,921.97 16,9583
Revenue from Operations other than Transportation	Decrease 1,149,739.43 29,5576
Gross operating revenues.....	Decrease \$21,280,661.40 17,3581
Operating Expenses	
Maintenance of way and structures	Decrease \$11,852,643.55 46,0859
Maintenance of equipment	Decrease 5,664,126.18 21,1827
Traffic expenses	Increase 369,322.38 29,9737
Transportation expenses	Decrease 15,189,829.61 27,2784
Miscellaneous operations	Decrease 544,157.43 28,1900
General expenses	Decrease 185,800.41 6,3242
Transportation for investment—Cr.	Increase 382,967.24
Total operating expenses.....	Decrease \$33,450,202.04 29,3559
Net operating revenue.....	Increase \$12,169,540.64 140,6761
Taxes accrued	Decrease 1,759,041.26 17,5024
Uncollectible railway revenue.....	Increase 17,128.85 55,3421
Operating income	Increase \$13,911,453.05

The substantial decreases in revenue during the year were due primarily to the reduction in traffic handled resulting from the post war business depression. Net ton miles, reflecting the volume of freight traffic, decreased 32.6%, and passengers carried one mile, reflecting the volume of passenger traffic, decreased 30.2%. Although the Interstate Commerce Commission ordered rate increases on August 26, 1920, full benefit of these increases was not secured because of the many reductions and readjustments in rates made necessary in 1921.

Effective March 31, 1921, rates on lumber and shingles from the northwestern states destined to Missouri River, Chicago district, and points east were reduced 6 and 7 cents per cwt. This was followed on September 10, 1921, by reductions in rates to southwestern points, including Kansas City and Oklahoma districts, in amounts varying from one to three and one-half cents per cwt. On December 24, 1921, further reductions were made in rates to points east of Chicago, including Atlantic Seaboard, ranging from one-half cent to 1½ cents per cwt.

Effective June 23, 1921, rates covering east bound movement of vegetables from northwestern states destined to points east of Chicago were reduced by amounts ranging from 17 to 33½ cents per cwt. This was followed on October 3, 1921, by reductions to points Chicago and west on the basis of taking off one-half of the general increase of August 1920. This resulted in a reduction of about 15 cents per cwt.

Effective July 21, 1921, rates for movement of apples from Washington, Montana, etc., to destinations east of Chicago were reduced to the extent of 16½ cents per cwt.

On December 15, 1921, all rates in Canada were reduced to the basis of 20 per cent. higher level than those in effect prior to September, 1920.

As a result of the falling off in tonnage handled, the rate reductions mentioned above and other rate reductions and adjustments not specifically mentioned, there was a decrease in the freight revenue of 16.7786 per cent. as compared with the previous year.

Passenger traffic decreased \$4,090,745.58, or 19.9053 per cent. Rates and train service were unchanged, but the business depression prevailing in all lines of industry had its effect in reducing the passenger travel.

The immigrant movement for the year 1921 was very light as compared with former years. The unusual deflation in the price of agricultural products and the increased rates for transportation prevented many home seekers from investigating and locating in the territory served by the Company.

With respect to the decrease in operating expenses, there was a reduction of 34 per cent. in gross ton miles and 30 per cent. in passengers carried one mile, as compared with the year 1920. This reduction in traffic is reflected principally in the accounts under Transportation—Rail Line and Maintenance of Equipment. It is also partly responsible for the large decrease in Maintenance of Way and Structures, although contributing factors were the favorable weather conditions and the improved individual performance of the employees. The tie and rail renewals in 1921 amounted to \$2,496,159.61, as compared with \$2,629,582.56 in 1920, practically the same for both years. There was no curtailment of the renewal of ties and rails and the track was maintained up to standard. The Company, however, suspended certain other work, such as cutting grass and weeds and removal of snow and ice, the effect of which was only transitory and which did not impair the road for safe operation.

Due to conditions over which the company had no control, operating expenses were abnormally high in 1921, notwithstanding the many economies effected which resulted in substantial reductions. In 1921 the operating expenses totaled nearly 80% of gross revenues, compared with approximately 60% in 1916, the last pre-war year. The cost of coal in 1921 was \$13,000,000, the price per ton amounting to two and four-tenths times as much as in 1916. On June 1, 1921, the United States Railroad Labor Board rendered a decision providing for a general decrease in wages effective July 1, 1921, which resulted in a saving of approximately \$3,000,000 for the last six months of the year. Notwithstanding this fact, the payroll, 58% of the total expenses, amounted to \$47,000,000, and was the largest single item of expense, the average compensation per man being two and one-seventh times as much as in 1916. The Company endeavored to reach an agreement with its employees for lower wages, but failed, and the dispute has been referred to the Labor Board, the only method of procedure under the law.

EQUIPMENT.

During the year the following equipment was received and taken into account:

Purchased:
 500 Refrigerator cars, 40 feet long, 60,000 lbs. capacity.
 1 Boarding car, 60 feet long, second hand.
 1 Steam timber derrick, 48 feet long, second hand.
 2 Automobiles.
 2 Automobile trucks.
 Built at Company Shops:
 4 Flat cars.
 3 Timber derricks.
 2 Water cars.

Improvements to rolling stock have been continued, such as superheaters, power grate shakers, automatic stokers, steel cabs and pilots for locomotives, minor improvements to passenger cars to insure the comfort and safety of passengers, to comply with the law, and to secure economy in operation. Owing to the readjustment of prices the Company has found it advantageous to use fuel oil as locomotive fuel on the Western divisions and has converted, during the year, 64 locomotives from coal to oil burners.

There were taken out of service:

5 Steam locomotives.
 1 Passenger and baggage car.
 3 Baggage and express cars.
 193 Box cars.
 51 Refrigerator cars.
 114 Stock cars.
 43 Flat and coal cars.
 13 Wooden ore cars.

3 Steel ore cars.
 21 Ballast cars.
 11 Sand cars.
 15 Caboose cars.
 9 Cinder cars.
 13 Boarding cars.
 2 Derrick and tool cars.
 5 Other work equipment cars.

Total amount expended for equipment purchased built at shops, and for improvements to equipment in service, was \$1,891,115.33. The original cost of the equipment taken out of service, conversions, and adjustments, amounted to \$605,972.03, resulting in a net increase in Investment in Equipment of \$1,285,143.30.

ADDITIONS AND BETTERMENTS.

The replacing of outer half of Ore Dock No. 3, consisting of 166 pockets, trestle extension and fender at outer end, also renewing in kind pile and timber approach to Dock No. 1, at Allouez, Wis., which was in progress at the close of 1920, has been completed.

The improvements made this year are: 55.5 miles automatic block signal system installed between Leavenworth and Skykomish, Wash.; 1,280 lineal feet of new steel and concrete bridges, 6,349 lineal feet of bridges filled, 121 concrete and cast iron culverts, 193.71 miles of wire right of way fence, 33.61 miles of woven wire placed upon existing fence, 10 depots, 5 mechanical coal chutes, 5 water tanks, 85 sidings and spur tracks, and 357,823 cubic yards of material moved in changes of line, widening banks, ballasting and filling bridges. There were placed upon old lines 57,332 cubic yards of concrete and riprap.

Work is in progress replacing timber dock No. 2 at Allouez, Wis., with concrete and steel dock to be ready for operation at opening of 1923 ore

season; constructing new terminals at Minneapolis Junction, Minn., and at Wenatchee, Wash., installing automatic block signals upon 165 miles of road; constructing 48.5 miles new second track; and renewing 1,457 lineal feet single track snowsheds between Leavenworth and Scenic, Wash.

The number of stockholders in the Company far exceeds that of its employees. At the annual meeting in 1921, its stockholders numbered 43,023, while the average number of employees during the year was only 24,403.

Respectfully submitted,

RALPH BUDD, President.

COMPTROLLER'S REPORT.

MR. LOUIS W. HILL,
Chairman, Board of Directors.

DEAR SIR—

Herewith I beg to submit statements showing the result of operations of the Great Northern Railway Company for the year ended December 31, 1921.

The statements, this year, do not include the operations of the Minneapolis Western Railway Company and the Duluth Terminal Railway Company and for purposes of comparison the figures for last year have been revised to exclude the operations of those companies.

Respectfully submitted,

GEO. H. HESS, JR., Comptroller.

REVENUE ACCOUNT.

EXCLUDING THE OPERATIONS OF THE MINNEAPOLIS WESTERN RAILWAY COMPANY AND DULUTH TERMINAL RAILWAY COMPANY, FOR BOTH YEARS.

YEAR 1921 COMPARED WITH YEAR 1920. OPERATING REVENUES.

Class	1921 (Excluding delayed items audited in the accounts of the U. S. R. R. Administration)		1920
	Revenue from transportation	Per cent of total	
Freight	\$74,700,240.68	\$89,760,845.24	73.2157
Passenger	16,460,279.62	20,551,025.20	16.7630
Excess baggage	.1587	160,800.62	.1327
Sleeping car	.7637	773,804.63	.1,112,882.40
Parlor and chair car	.0912	92,403.85	.127,816.63
Mail	2,8198	2,856,978.30	3,177,767.35
Express	2,4281	2,460,104.48	2,998,461.08
Other passenger train	.0115	11,678.41	16,562.23
Milk	.3992	404,442.17	35.82
Switching	.5881	595,880.57	.766,741.04
Special service train	.0583	59,111.13	33,514.47
Other freight train	.0014	1,398.16	.327.82
Total revenue from transportation	97,2955	\$98,577,122.62	\$118,708,044.59
			96.8272

Revenue from Operations Other than Transportation:	1921		1920
	Amount	Per cent of total	
Dining and buffet	\$618,103.68	\$873,464.53	.7124
Hotels and restaurants	396,656.20	709,101.03	.5784
Station and train privileges and train news service	.2215	224,464.01	.330,018.78
Parcel room receipts	.0397	40,237.16	62,135.20
Storage—Freight and baggage	.1254	127,011.60	614,267.39
Demurrage	.1936	196,133.59	323,533.98
Telegraph and telephone	.1388	140,580.58	156,083.23
Power	.0232	23,515.98	.....
Rents of buildings and other property	.1551	157,159.39	142,553.40
Miscellaneous	.8056	816,219.00	678,663.08
Total	2,7045	\$2,740,081.19	\$3,889,820.62
			3.1728

Gross operating revenues 100,0000 \$101,317,203.81 \$122,597,865.21 100,0000

OPERATING EXPENSES

Class	1921		1920
	Per cent of total	Amount	
Maintenance of way and structures	17.2254	\$13,865,917.21	\$25,718,560.76
Maintenance of equipment	26.1815	21,075,307.76	26,739,433.94
Traffic expenses	1.9895	1,601,477.99	1,232,155.61
Transportation expenses	50.3059	40,494,718.56	55,684,548.17
Miscellaneous operations	1.7220	1,386,162.27	1,930,319.70
General expenses	3.4189	2,752,128.42	2,937,928.83
Transportation for investment—Cr.	.8432	678,799.71	295,832.47
Total operating expenses	100,0000	\$80,496,912.50	\$113,947,114.54
			100,0000

Per Mile of Road Operated	1921		1920
	Amount	Per cent of total	
Revenue from transportation	\$12,075.44	\$14,522.14	
Revenue from operations other than transportation	335.65	475.86	
Gross operating revenues	\$12,411.09	\$14,998.00	
Operating expenses	9,860.66	13,939.71	
Net operating revenue	\$2,550.43	\$1,058.29	
Taxes accrued	1,015.65	1,229.50	
Uncollectible railway revenue	5.89	3.79	
Operating income	\$1,528.89	\$175.00	
Average miles of road under operation	8,163.44	8,174.28	
Operating expenses, per cent of:			
Total revenue from transportation	81.66	95.99	
Gross operating revenues	79.45	92.94	
Operating expenses and taxes, per cent of:			
Gross operating revenue revenues	87.63	101.14	

INCOME ACCOUNT YEAR ENDED DECEMBER 31, 1921		
Operating Income:		
Railway operating revenues.....	\$101,317,203.81	
Railway operating expenses.....	80,496,912.50	
Net revenue from railway operations.....	\$20,820,291.31	
Railway tax accruals.....	8,291,223.81	
Uncollectible railway revenues.....	48,079.69	
Railway operating income.....		\$12,480,987.81
Equipment rents—Net.....	Cr.	\$739,997.26
Joint facility rents—Net.....	Dr.	354,574.13
Net railway operating income (Transportation Act).....		\$12,866,410.94
Non-Operating Income:		
Miscellaneous rent income.....		\$456,991.40
Miscellaneous non-operating physical property.....		79,508.96
Dividend income:		
C. B. & Q. R. R. stock— Pledged.....	\$21,809,560.00	
Other stocks.....	237,592.84	
Interest from funded securities:		
*Spokane, Portland & Seattle Ry. Co. bonds.....	\$7,233,100.00	
Other securities.....	701,776.87	
Income from unfunded securities and accounts.....		1,030,922.30
Miscellaneous income.....		181,669.58
Total non-operating income.....		31,731,121.95
Gross income.....		\$44,597,532.89

Gross income (brought forward).....		\$44,597,532.89
Deductions from gross income:		
Rent for leased lines.....		\$13,709.54
Miscellaneous rents.....		15,398.39
Miscellaneous tax accruals.....		154,767.12
Interest on funded debt:		
Bonds outstanding in hands of the public.....	\$13,188,068.48	
N. P.—G. N. Joint 15-Year 6 1/2% Convertible Gold Bonds.....	132,556.04	
Equipment trust and Miscellaneous obligations.....	426,884.67	13,747,509.19
Interest on unfunded debt.....		1,161,805.69
Amortization of discount on funded debt.....		13,709.81
Miscellaneous income charges.....		1,020,707.37
Total deductions from gross income.....		16,127,607.11
Net income.....		\$28,469,925.78
Disposition of net income:		
Dividend appropriations of income:		
Feb. 1, 1921, 1 3/4% on \$249,470,600.....	\$4,365,735.50	
May 2, 1921, 1 3/4% on 249,471,000.....	4,365,742.50	
Aug. 1, 1921, 1 3/4% on 249,471,200.....	4,365,746.00	
Nov. 1, 1921, 1 3/4% on 249,471,400.....	4,365,749.50	
Total.....		\$17,462,973.50
Income applied to sinking and other reserve funds.....		24,284.44
Total appropriations of income.....		17,487,257.94
Balance, transferred to profit and loss.....		\$10,982,667.84

*This amount represents accruals for period March 1, 1915, to March 1, 1920, of which \$1,005,378.64 has been paid.

GENERAL BALANCE SHEET, December 31, 1921

INVESTMENTS.	STOCK.	
Investment in road and equipment:	Capital stock	\$249,478,250.00
Road.....	Less—In treasury of company.....	1,100.00
Equipment.....		
	Premium on capital stock.....	\$249,477,150.00
	Total stock.....	81,268.44
Improvements on leased railway property.....		
Sinking funds.....		
Deposits in lieu of mortgaged property sold.....		
Miscellaneous physical property.....		
INVESTMENTS IN AFFILIATED COMPANIES.	GOVERNMENTAL GRANTS.	
Stocks:	Grants in aid of construction.....	
C. B. & Q. R. R. Co.— Pledged.....	LONG-TERM DEBT.	
Other stocks.....	Mortgage bonds.....	\$333,871,909.09
	Less—Held in Treasury.....	\$1,755,000.00
Bonds.....	Held by Mortgage Trustee.....	51,145,393.93
Notes.....	Pledged with Treasury Department U. S. A.....	23,250,000.00
Advances.....		
	Total stock.....	76,150,393.93
Other investments:	Outstanding in hands of public.....	\$257,721,515.16
Stocks.....	Equipment trust obligations.....	5,200,200.00
Bonds.....	Miscellaneous obligations.....	2,776,000.00
Notes.....	Non-negotiable debt to affiliated companies.....	519,656.55
Miscellaneous.....		
	Total long-term debt.....	266,217,371.71
Total investments.....	CURRENT LIABILITIES.	
	Loans and bills payable.....	\$21,500,000.00
CURRENT ASSETS.	Traffic and car-service balances payable.....	369,331.38
Cash.....	Audited accounts and wages payable.....	5,735,830.70
Demand loans and deposits.....	Miscellaneous accounts payable.....	7,578,054.64
Time drafts and deposits.....	Interest matured unpaid.....	6,805,263.62
Loans and bills receivable.....	Dividends matured unpaid.....	14,453.00
Traffic and car-service balances receivable.....	Funded debt matured unpaid.....	1,200.00
Net balance receivable from agents and conductors.....	Unmatured interest accrued.....	626,040.20
Miscellaneous accounts receivable.....	Other current liabilities.....	58,605.43
Material and supplies.....		
Interest and dividends receivable.....	Total current liabilities.....	42,688,778.97
Other current assets.....		
Total current assets.....	DEFERRED LIABILITIES.	
	Other deferred liabilities.....	3,112,993.46
DEFERRED ASSETS.	UNADJUSTED CREDITS.	
Working fund advances.....	Tax liability.....	\$5,147,437.34
Insurance and other funds.....	Insurance and casualty reserves.....	2,167,312.23
Other deferred assets.....	Operating reserves.....	286,063.15
	Accrued depreciation—Road.....	2,193,955.23
Total deferred assets.....	Accrued depreciation—Equipment.....	32,195,905.85
UNADJUSTED DEBITS.	Accrued depreciation—Miscellaneous physical property.....	5,719.92
Rents and insurance premiums paid in advance.....	Other unadjusted credits.....	5,956,152.64
Discount on funded debt.....		
Other Unadjusted debits.....	Total unadjusted credits.....	47,952,546.36
Total unadjusted debits.....		
Grand Total	CORPORATE SURPLUS.	
	Additions to property through income and surplus.....	\$37,457,666.38
	Funded debt retired through income and surplus.....	1,392,002.39
	Sinking fund reserves.....	25,184.55
	Appropriated surplus not specifically invested.....	615,862.18
	Total appropriated surplus.....	\$39,490,715.50
	Profit and loss.....	89,881,082.67
	Total corporate surplus.....	129,371,798.17
Grand Total	Grand Total.....	\$739,082,301.32

[ADVERTISEMENT]

Railway Officers

Financial, Legal and Accounting

H. W. Price has been appointed auditor of the Tuckasegee & South Eastern, effective July 31.

J. J. Cornwell has been appointed general counsel of the Baltimore & Ohio with headquarters at Baltimore, Md., succeeding **Hugh L. Bond, Jr.**, deceased.

Operating

C. O. McHugh has been appointed transportation assistant in the office of the general superintendent of the Quebec district of the Canadian Pacific with headquarters at Montreal.

D. J. Swope has been appointed acting superintendent of the Toledo-Ludington division of the Pere Marquette with headquarters at Saginaw, Mich., to succeed **F. P. Little**, granted leave of absence on account of ill health.

Purchasing and Stores

W. P. Dittoe, purchasing agent of the New York, Chicago & St. Louis, has been appointed general purchasing agent of that road and of the Lake Erie & Western.

C. M. Yohe, assistant purchasing agent of the Pittsburgh & Lake Erie with headquarters at Pittsburgh, Pa., has been promoted to purchasing agent with the same headquarters.

Special

William N. Neff, until recently chairman of the Southwestern Railroad Executives' Association, with headquarters at St. Louis, Mo., has been elected president of the International de Productos Company, with headquarters at Asuncion, Paraguay, South America, this company controlling large interests including a railroad, packing house, timber lands, live stock and boat transportation on the Paraguay river. He will leave New York on July 22, to assume his new duties. Mr. Neff was born on Aug. 11, 1874, at Lawrence, Kan. He entered the service of the Missouri Pacific in June, 1889, as a warehouse foreman and served successively as telegraph operator, agent, roadmaster's

clerk and chief clerk to a division superintendent of the same road, until September, 1895. From the latter date until March, 1900, he was a telegraph operator, maintenance of way clerk, clerk in superintendent's office, chief clerk to superintendent, chief clerk to the general superintendent and assistant superintendent of the Great Northern. He left in March, 1900, to become superintendent of the St. Louis-Southwestern which position he held until June, 1901, when he was transferred to the St. Louis-Southwestern of Texas. He later became chief clerk to the president of that road and on May, 1911, he was elected vice-president and general superintendent which position he held until January, 1915, when he left to become superintendent of the Northwestern Pacific. He returned to the St. Louis-Southwestern in November, 1917, as vice-president and general manager, and from July, 1918, to March, 1919, he was general manager of the St. Louis-Southwestern,



W. N. Neff

the Louisiana & Arkansas, and the Illinois lines of the Missouri Pacific. During the period of federal control he was federal manager of the St. Louis Southwestern and the Louisiana & Arkansas. Since April, 1920, he has been chairman of the Southwestern Railroad Executives Association, which position he resigned recently.

Mechanical

H. A. Shepard, superintendent of telegraph of the New York, New Haven & Hartford with headquarters at New Haven, Conn., has been appointed superintendent of electric transmission and communication with the same headquarters and the position of superintendent of telegraph has been abolished. The jurisdiction of Mr. Shepard's new office will include all lines of electric communication and transmission on the system, including the electrified territory between New York and New Haven. **Charles S. Dow** has been appointed superintendent of communication with headquarters at New Haven.

General

M. H. MacLean, vice-president of the Spokane & Eastern Railway and Power Company and the Inland Empire Railroad, has been elected president with headquarters at Spokane, Wash., succeeding **George H. Taylor**, deceased. Other officers have been appointed as follows: **J. W. Esmond**, vice-president with headquarters at Chicago; **F. E. Conners**, vice-president and general manager with headquarters at Spokane; **Waldo G. Paine**, vice-president, traffic manager and treasurer with headquarters at Spokane; **L. C. Ream**, secretary and auditor with headquarters at Spokane; **Chester Corey**, assistant secretary and assistant treasurer with headquarters at Chicago; **Graves, Kizer & Graves**, general counsel with headquarters at Spokane; **F. Weidmer**, claim agent; **J. F. Gannaway**, superintendent; **J. W. Hungate**, electrical superintendent; **A. J. Mayham**, mechanical superintendent; **J. J. Daschbach**, storekeeper; **A. J. Witchel**, chief engineer with headquarters at Portland, Ore.

Obituary

Herman Paepcke, chairman of the board of directors of the Blytheville, Leachville & Arkansas Southern, died on July 22 at Chicago.

C. W. Jones, manager of the first district of the Chicago, Rock Island & Pacific, with headquarters at Des Moines, Ia., died in that city on July 22 after a long illness.



Photo by Kadel & Herbert

Train Ferry at Cork, Ireland, Loading Army Trucks for Shipment to England